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A PRACTICAL TREATISE
ON
TUMORS OF THE UTERUS
AND ITS APPENDAGES.

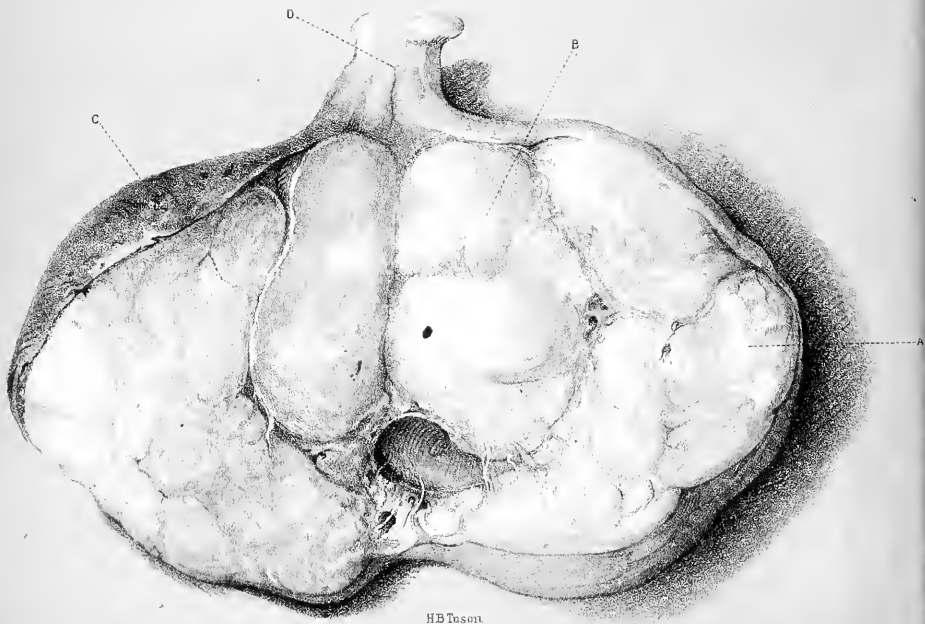


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Nº 1



Nº 2



H B TOSONI

ON

TUMORS OF THE UTERUS

AND ITS APPENDAGES.

(JACKSONIAN PRIZE DISSERTATION.)

BY THOMAS SAFFORD LEE, M.R.C.S.E.

FELLOW OF THE MEDICO-CHIRURGICAL SOCIETY;
FORMERLY HOUSE-SURGEON TO UNIVERSITY COLLEGE HOSPITAL, AND TO THE
HOSPITAL OF WOMEN, RED LION SQUARE;
MEMBER OF THE ROYAL MEDICAL SOCIETY OF EDINBURGH, &c. &c.

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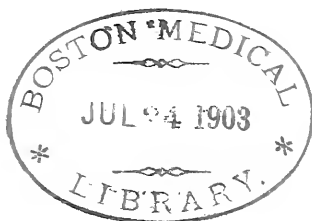
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TO

SAMUEL COOPER, Esq., F.R.S.

PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND,
CONSULTING SURGEON TO UNIVERSITY COLLEGE HOSPITAL, &c. &c. &c.

THE FOLLOWING PAGES,

COMPRISING A DISSERTATION UPON TUMORS OF THE UTERUS

AND ITS APPENDAGES,

FOR WHICH THE JACKSONIAN PRIZE WAS AWARDED,

ARE MOST RESPECTFULLY DEDICATED, BY HIS GRATEFUL AND OBLIGED PUPIL,

THE AUTHOR.

June 18, 1846.



P R E F A C E.

SOME years since, having obtained the honour of Dr. Murphy's Gold Medal for Midwifery at the University College, my attention was directed more especially to this branch of Medicine. The attention to practical midwifery which was excited by that competition, and the close observation of the results of delivery in a large number of cases, convinced me that disease frequently followed the natural efforts of parturition; of which little was said and less was written. On referring to works on Midwifery, I found that little had as yet been done in the pathology of diseases of females.

A short stay at Paris gave an additional stimulus to the researches I had commenced. I followed for a few months the practice of M. Emery, M.D., Physician to the Hospital of St. Louis, and in his service had opportunities of observing his treatment of uterine diseases; more particularly in those cases of ulceration depending on inflammatory action. On my return to England I was appointed House-Surgeon to University College Hospital, and steadily attended the practice of Dr. Murphy at that Institution. I am indebted also to Dr. Ashburner, for many opportunities of observing his practice at the Middlesex Hospital.

Through the kindness of Dr. Rigby I became House-Surgeon to the Hospital for Diseases of Women, Red Lion Square, where a large field was at once thrown open to me to study these particular diseases.

In August 1844, I became acquainted accidentally with the subject of the Jacksonian Prize, viz. "Tumors of the Uterus and its Appendages;" and being one to which my attention had been previously directed, I immediately entered into the rank of competition, and ultimately became successful. The following pages are the result.

The remarks on this subject have been strictly confined to *Tumors* of the Uterus and its Appendages; which have been classified in three divisions, viz.—

1. Tumors of the Uterus: comprising tumors of the walls of the uterus, polypoid tumors, cauliflower excrescence of the uterus, and malignant tumors of that organ.

2. Tumors of the Ovary: comprising cystic tumors of the ovary, and the malignant tumors of that organ.

3. Tumors of the Vagina and external organs of generation.

Through the whole of the Dissertation I have endeavoured to adhere strictly to facts, to assume nothing, and to depend upon those cases of disease only which have come under my own notice. Where this has been impossible, and it was necessary to collect cases in illustration from various periodicals and other publications, the greatest care has been taken to ascertain their accuracy, and those only upon which I could rely have been referred to.

The Museum of the Royal College of Surgeons, and other large collections attached to the leading medical schools of London, afforded opportunities for the most extensive enquiries into the pathology of these diseases; and from these stores of information I obtained many illustrations, both interesting and important.

In the Tables in Ovarian Disease and Ovariectomy, the greatest pains have been taken to obtain correct results. A correspondence was entered upon with several of the ope-

rators, and in almost every instance they politely returned answers to my enquiries, and supplied me with valuable information. Many have given me successful and unsuccessful cases that they have not had time or opportunity to publish to the profession. Among other enquiries, I have been most anxious to ascertain from these gentlemen whether the patients upon whom they operated successfully were then living and in the enjoyment of good health. On this point I have received the most conclusive evidence in the affirmative.

The real value of tapping being a very important question to determine, a large number of cases have been collected, in which the duration of life after the first operation is particularly noticed. I find the mortality is extremely large, much larger than I imagined. From enquiries among those best capable of judging, I find this important fact is fully established, and more I fear than is generally admitted.

I now commit this Dissertation into the hands of the Profession, who will give an impartial opinion on its merits: and if it fall under the notice of those who, like myself, have been fruitlessly seeking for information on the subject, and if it in any way supply the deficiency, my object is fully accomplished, which will sufficiently repay any trouble or anxiety that these researches may have caused me.

*Upper Gordon Street, Euston Square,
January, 1847.*

ERRATA.

- Page 8, line 18 from the top, for 'nervous' read 'mucous.'
- 33, line 12 " for 'Malgaune' read 'Malgaigne.'
- 44, line 26 " for 'Ramsbottom' read 'Ramsbotham'.
- 47, line 8 " " " " "
- Note to same page, " " " "
- 92, line 4 from the top, for 'Dr. F. Clarke' read 'Dr. John Clarke'.
- 92, line 10 " " " " "
- 92, line 2 from the bottom, omit the words 'on examination'.
- 134, line 10 " for 'fibrine' read 'fibrine'.
- 134, line 8 " " " "
- 135, line 10 from the top, " "
- 155, line 9 from the bottom, for 'as is necessary' read 'care is necessary'.
- 220, line 10 " for '(St. G.)' read '(Sp. G.)'
- 223, line 7 from the top, for 'Pd. Hyd.' read 'Pil. Hyd.'
- 237, line 15 from the bottom, for 'uterus' read 'uterine'.

CONTENTS.

PART I.

CHAPTER I.

	Page
<i>Tumors of the Uterus</i>	1
Pathology of	3
Symptoms of	11
Diagnosis of	18
Treatment of	24
Cases illustrative of	29

CHAPTER II.

<i>Polypoid Tumors of the Uterus</i>	32
Pathology of	35
Source of hæmorrhage of	41
Symptoms of	44
Diagnosis of	48
Effects produced by	52
Case illustrative of	55

CHAPTER III.

<i>Soft Polypi of the Uterus</i>	58
1. Vesicular polypi	—
2. Polypi from the enlargement of the Nabothian glands	60
3. Fibro-cellular polypi	61
4. Cellulo-vascular polypi	63
5. Mucous polypi	64
6. The channelled polypus of the cervix	—
Symptoms of	66
The treatment of polypi	67
Case illustrative of	78

CHAPTER IV.

	Page
<i>Cauliflower Excrescence of the Os Uteri</i>	81
Pathology of	82
Symptoms of	88
Diagnosis of	93
Treatment of	94
Case illustrative of	96

CHAPTER V.

<i>Encephaloid Polypi</i>	103
Pathology of	—
Symptoms of	106
Diagnosis of	108
Treatment of	—
<i>Hæmatoma of the Uterus</i>	110
<i>Scirrhus of the Cervix Uteri</i>	111

PART II.

CHAPTER I.

DISEASES OF THE OVARY.

<i>Ovarian Dropsy</i>	115
Pathology of	120
Symptoms of	139
Diagnosis of	145
Treatment of	154
I. By palliatives	155
1. By medical remedies	156
2. By the addition of surgical means	164
By tapping, &c.	—
II. The radical cure of Ovarian Dropsy by the excision of the sac considered	172
I. What is the common course of Ovarian Dropsy? and what the result of its ordinary treatment?	174
Tables shewing the mortality of Ovarian disease after first tapping	176
Mr. Southam's Table	179
Cæsar Hawkins' Table	182
II. What are the results of the operations already per- formed?	183
Adhesions, diagnosis of	188
Complication with other diseases	195
Causes of death after the operation	196
Character of the disease influences the result	197
Is Ovarian Dropsy a malignant disease?	199
The different modes of operating on Ovarian dropsy	201

III. The result of our inquiry	Page 208
Concluding remarks	211
Cases illustrative of Ovarian Dropsy	217
<i>Organic and Malignant changes in the Ovary</i>	224
1. Organic enlargements of the Ovary	—

MALIGNANT TUMORS OF THE OVARY.

1. Scirrhus of the Ovary	228
2. Encephaloid disease of the Ovary	231
3. Hæmatoma of the Ovary	233
4. Melanosis of the Ovary	234
Treatment of malignant diseases of the Ovary	235
<i>Tumors of the Fallopian Tubes</i>	236
Bony tumors of	239
Case illustrative of scirrhus tumor of the left Ovary	240

PART III.

TUMORS OF THE VAGINA AND THE EXTERNAL ORGANS OF GENERATION.

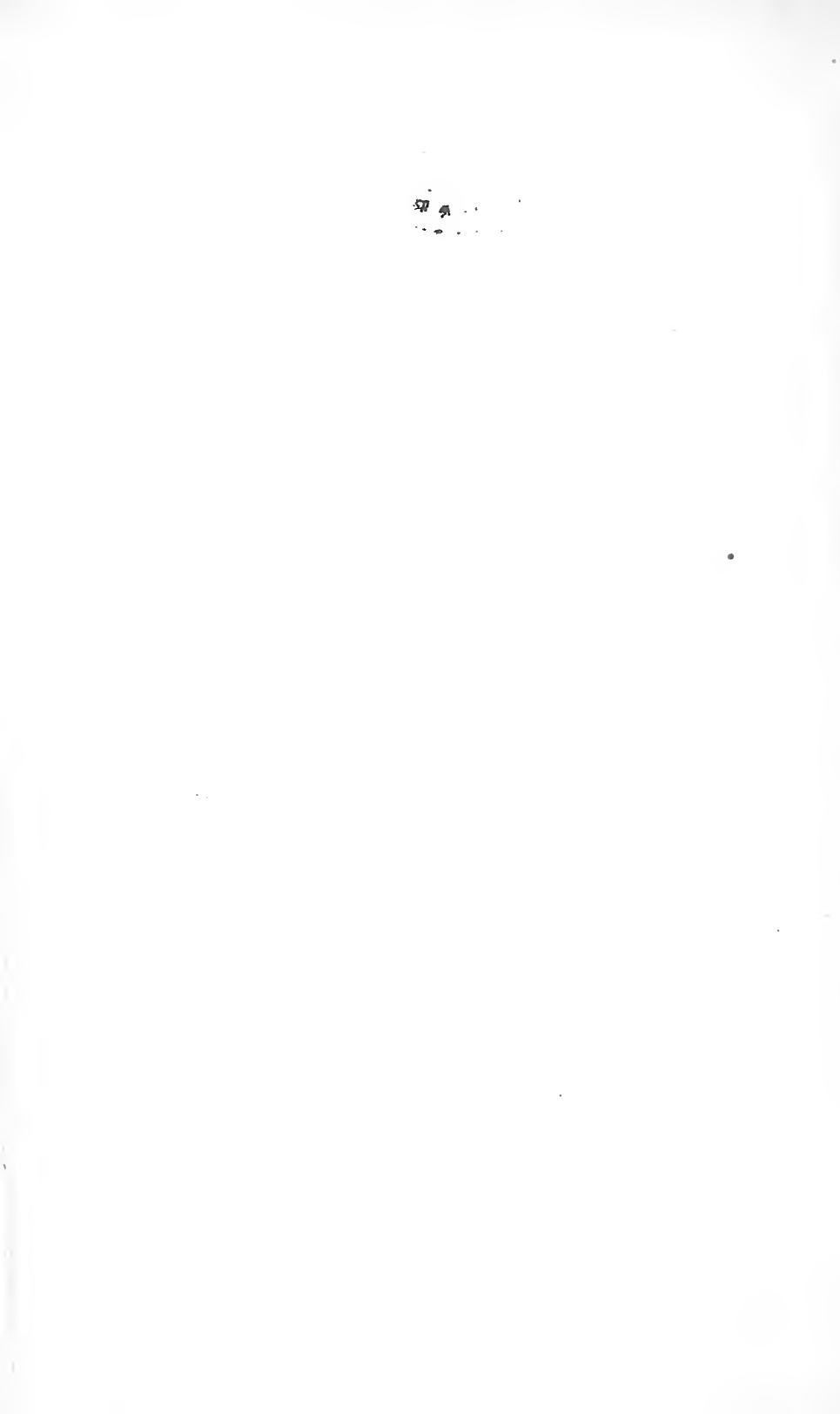
I. <i>Of Tumors of the Vagina.</i>	
1. Cellulo-vascular	245
2. Polypi produced by the enlargement of the mucous follicles of the vagina	246
Treatment of polypi in the vagina	248
Tumor produced by the protrusion of the anterior wall of the vagina	249
2. Protrusion of the posterior wall	250
3. Protrusion of the entire mucous membrane of the vagina	251
II. <i>Tumors of the External Organs of Generation.</i>	
Warty tumors of the vulva	252
The oozing tumor of the labium	254
Encysted tumors of the labium	255
Tumors of the orifice of the urethra	—
Tumors of the urethra, arising from a thickened state of the cellular tissue and a varicose state of the vessels of the part	258
Enlargement of the clitoris	259
Tumor of the labium from effusion of blood	261
Tumor of the nymphæ	—

APPENDIX.

	Page
Table (No. 11). A Table of all the known Operations of Ovariectomy from 1809 to 1846	264
Table (No. 12). Shewing the number of Cases operated on by the large Incision	272
Table (No. 13). Shewing the number of Operations of small Incision	273
Table (No. 14). A Table of Cases where the Tumor was not extracted	274
Table (No. 15). A Table of Cases where no Tumor was found	—

PART I.

TUMORS OF THE UTERUS.





CHAPTER I.

TUMORS OF THE UTERUS.

By the term Tumors of the Uterus, we understand all those morbid growths which, being at the same time attached to its substance, project into its cavity or from its walls. The definition is extensive, and will require many divisions to facilitate the description of these bodies. We propose to consider them, first, as regards their benignness; secondly, as to their malignancy: and the subdivisions of these heads will form the framework of this portion of the Essay.

The benign tumors of the uterus have received several names from various authors. They have been called the hard tumor of the uterus, fibrous or fleshy tubercle, scirrhus tubercle of the uterus, &c.: but we think the term fibrous tumor of the uterus most applicable, and shall therefore adopt it.

The existence of this disease is generally indicated to the patient by the derangement of the functions of the neighbouring viscera, and not by any particular symptoms referable to the womb. There is irritability of the bladder and rectum, the urine cannot be long retained, or there sometimes may be entire retention; the fæces are flattened, and from a weight in the pelvis the patient is led to take advice. (See Case II.)

The *number* of these morbid growths varies considerably: in one of the preparations accompanying this Essay there were eight. Lisfranc has seen twenty: and in the Museum of the Royal College of Surgeons, England, there is a preparation of a uterus containing eight or nine tumors, varying from one to four inches in diameter. (*Uterus* 31.) On the other hand, the uterus may contain only one tumor: when this is the case it is generally very large, occupying the entire organ, deforming and sometimes obliterating its cavity. This fact is well seen in a

preparation of Mr. Hunter's in the Museum of the Royal College of Surgeons, England, (*Uterus* 18), where the walls of the uterus contain a tumor "nine inches long, seven broad, and occupies a space from the fundus of the uterus to the outer end of the lower wall of the vagina." Another is situated in the neck of the womb, and is twelve inches in length. But very frequently one large mass is composed of a number of individually small tumors, with one general envelope. So that it appears, where many tumors in the same organ are scattered over it, they only attain a comparatively small size; whereas, where there is only one, or an aggregate mass of several, its limits can hardly be defined.

They generally assume a globular form, especially when situated in the walls of the uterus; but they are so altered by circumstances—pressure, and the like—that every imaginable figure is attained by them. When occupying the cavity of the uterus, they take upon themselves its form; when expelled into the vagina, they adapt themselves to its shape; and when projecting into the peritoneal cavity, they may be tubercular, pear-shaped, oval, or round.

Fibrous tumors vary in size, from that of a pea to the head of a fœtus, or even to the size of a pregnant womb. Gualtier de Claubry met with one weighing 39 lbs; another, which projected externally by a pedicle of an inch thick from the fundus, weighed 40 lbs., was 46 inches in circumference, and 13 in diameter, is described by Kummer.* They may remain dormant at any given size for years, and then take on an active character; or they may never seriously affect the patient. In the Museum of the Royal College of Surgeons, England, (*Uterus* 27), there is a preparation, which was taken from an old lady who died at the age of 91, and had been suffering from these growths 37 years: and a second at Guy's (2266⁹⁰), which was taken from another of 62 years of age, who had had the disease nearly 30 years.

* *Outlines of the Principal Diseases of Women.* Fleetwood, Churchill, pp. 174.

Tumors of the uterus are more frequently observed in virgins, and those who have never borne children, than in the married: and the frequency of this occurrence is very great, as computed by Bayle, who says, "that the fifth part of women more than 35 years old are affected with fibrous tumors of the womb."

Pathology of Fibrous Tumors of the Uterus. Fibrous tumors of the uterus vary in their situation, and may be classed under three heads: first, those which are placed immediately under the peritoneal covering of the womb; secondly, those within its structure; and thirdly, those submucous tumors placed directly under its lining membrane. These all vary, both as regards their symptoms and the effects they produce upon surrounding tissues.

The most usual position for these tumors is the submucous, viz. those projecting into the cavity of the womb; and the pedicles of these are generally situated just below the openings of the fallopian tubes. The next position in which they are the most abundant is the posterior wall and fundus of the uterus: they are very rarely situated in the anterior wall, and still more rarely in the cervix uteri. These observations were obtained by the examination of 74 preparations in the Museums of the Royal College of Surgeons, University College, Bartholomew's, Guy's, and King's College.

TABLE. No. I.

The frequency of Fibrous Tumors, and their various situations in the Uterus.

No. of Preparations.	MUSEUMS.	Posterior Wall of Uterus.	Anterior Wall of Uterus.	Fundus Externally.	Fundus Walls.	Distending the Cavity.	Posterior part of Cervix.	Anterior part of Cervix.	In all parts of Uterus.
14	R. Coll. of Surgeons	5	1	3		4	1		
13	University College	5			2	5	1		
10	Bartholomew's . .	4	2		1	2	1*		
29	Guy's	2	1	15		7			4
8	King's College . .	2			3	1	1		
74		18	4	18	6	19	4	0	5

* The whole neck of the womb.

Those situated under the peritoneum, on the surface of the uterus, may only project slightly, causing an irregular sensation on examination; while others generally protrude from its surface, become detached from it, and are only attached to it by a thin pedicle of peritoneum, forming a polypoid tumor from the walls of the uterus.*

M. Lisfranc says, that the peritoneum does not entirely cover such tumors when in this situation; which is quite true before they become detached from the surface of the uterus, but after this has occurred they are entirely covered by this membrane.

When situated in the walls of the uterus, these tumors appear to occupy a space between its fibres, and are enclosed in a cyst, to which they are very loosely connected, so that without the slightest force they can be turned out of their bed by the handle of the scalpel. These cysts appear to be thicker in some cases and thinner in others; but they are always present and distinct: and this is an important fact, from the knowledge of which an operation has been proposed to enucleate, or turn out the tumor, by the aid of the scalpel.

Those tumors which are submucous are by far the most dangerous, from the tendency they have to produce large and violent bleedings: these usually occur at the catamenial periods; but when the disease is advancing, these periods are much shorter than natural, and the discharge continues for a longer time.

The uterine tissue around these tumors does not appear to be generally increased in bulk when they are situated in the uterine walls, but it is opened out so as to receive the morbid production: but when the tumors project into the cavity, and either become polypoid or attached to a very broad base, they distend the cavity of the uterus, and it invariably takes on itself the same action as in pregnancy, its walls becoming

* See preparation in University College Museum, No. 1424, where the tumor is the size of an egg, hanging like a polypus from the external part of the womb.

thicker, as in that state. In a preparation of Dr. Reid's I examined, in which a tumor 3 or 4 lbs. weight occupies the cavity of the uterus, its walls were an inch thick, and presented the same appearances, when cut, as the pregnant uterus. Dr. Hooper* and Lisfranc think, that in all uterine tumors the tissue of the uterus is increased—but the former makes an exception: he says, "This is not the case, however, in all instances; for it is no unusual thing to have large masses of the disease surrounded by very thin and extended uterine fibres." From the difference of opinion that exists on this point, I have examined many preparations to endeavour to ascertain the truth: I find that the increase of uterine tissue is not always constant. In Guy's Hospital Museum there are several preparations; in some of which the increase of uterine substance is very great, while in others there is a thinning of the fibre over the tumor. In Dr. Reid's case the walls were an inch thick; and in the University College Museum there is an extremely large tumor, surrounded by very thin uterine walls. When the tumor projects into the cavity of the uterus, its walls are generally increased in thickness; but when it is situated in its substance, the uterine tissue is most frequently lessened.

The tumor itself is hard and smooth on the surface; its natural figure is globular, although it may be altered into a variety of shapes by accidental circumstances: it is, as we have before stated, enclosed in a cyst, and when cut open presents the following appearances. It is of a pale ash colour, intersected and interlaced by shining white lines, producing interspaces, which are filled with a dirty white matter: M. Lisfranc believes this to be plastic lymph—Leveret compares it to the baked teat of a cow—M. Rous thinks it resembles the intervertebral cartilages of old men. Dr. Rigby supposes that the hard white lines which intersect these tumors consist of nearly pure cartilage: the greyer coloured softer portions between them, and which form the bulk of the tumor, seem

* *Morbid Anatomy of the Uterus.*

also to consist of a cartilaginous structure, intermingled with a finer web of cellular tissue. Some tumors, when cut into, present a number of layers upon a central nucleus, with such regularity, as to lead to the supposition that they had attained their bulk from actual deposit. Dr. Hooper thinks that this mode of formation decidedly takes place in some instances: he says, "I have a tumor of the uterus in my museum the size of a cricket-ball, the cut surface of which presents such a regularity of these lines, as to leave very little doubt of the increase of the tumor having been effected by successive depositions of layers on one small nucleus." It has been stated to have a fleshy appearance; but this is not common.

I have examined many portions of these tumors from various situations of the uterus, by the microscope, and I find that they invariably present a cellulo-fibrous appearance. From a part of the central tumor (No. 1), which accompanied the Essay, three different degrees of the same object were observed: in one portion the cellular tissue predominated; in another the fibrous tissue, combined with cells; and in a third, the true-looped fibrous tissue, radiating from a centre, and diverging into a form resembling the star-fish. No other cell, except the simple nucleated cell, could be distinguished. Dr. Oldham states, that the anatomical elements of the fibrous growth are a clear unstriped fibre, closely packed, and interspersed in some instances with crystalline calcareous grains (the existence of which has long been known as a chemical constituent of them), and minutely divided arteries. These growths may degenerate into cartilaginous or bony deposits.

When these tumors have remained for many years in a dormant state, they are frequently found to have undergone changes in their structure; their minute tissue becomes much denser, cartilage becomes deposited in isolated points, which grates under the knife, and assumes a horny and semitransparent state when dried; and here and there actual spicula of bone are observed. I believe this is the ordinary mode by which bone is deposited; although some think that all

previous changes can be dispensed with, and that bone can be deposited at once. In the Museum of the Royal College of Surgeons, England, is a beautiful preparation (*Uterus 15*), which well illustrates the former views: a tumor of the uterus is laid open, and presents points of cartilage and bone interspersed in all directions; and in many parts bone is seen deposited in the centre of a small portion of cartilage, which more properly is undergoing the bony degeneration. Lisfranc also states, "I have shewn a womb of enormous size, extracted from the pelvis of an old woman; upon whom I found fibrous tumors *not* degenerated, bony tumors, and cartilaginous tumors."

The bony transformation is very hard, hardly to be cut with a knife, and occasionally it is so compact as to be able to receive a fine polish: this is seen in Guy's Museum. This deposit may commence (as we have seen) in all parts of the tumor; may do so in the centre, and sometimes it only attacks the circumference. Dr. Lee, in the *Med.-Chir. Trans.*, vol. xix. p. 98, relates a case which occurred in St. George's Hospital, "where towards the circumference of the tumor the fibrous structure was distinct, but the central part consisted of hard yellow-coloured concretion of carbonate and phosphate of lime." In the University College Museum there is a preparation, taken from the uterus of an old woman, which is perfectly hollow; proving that the deposit had only taken place in its surface. Another preparation, still more conclusive of this point, is preserved in St. Bartholomew's Museum, (No. 6, Series 26). Here there is a complete cyst of bone, while the internal portion consists of a *firm fleshy substance*.

When tumors of the uterus project into the cavity of the uterine organ, and there undergo the bony degeneration, they may become detached and expelled from it: there are many instances on record of the expulsion of these bodies. This bony change produces no derangement, either as regards the general health of the patient, or in the function of the affected organ. In Dr. Lee's case there had not been even a suspicion

of uterine disease during life: and Dr. Hooper* says, "Of the few instances I have seen of this tumor of the uterus, the substance of the uterus was quite healthy, and the bony mass was surrounded by the fibres of the uterus, which were in close contact with it."

On analysis, these bony tumors are found to consist of the phosphate and triple phosphate of lime, with a little carbonate and phosphate of soda, mixed with cellular tissue and animal matter in variable proportions.

Tumors of the womb are insensible. This statement at first appears startling, when we are aware that sensibility is one of the surest tests of their presence when projecting into the cavity of the womb; but this sensibility depends upon the covering of the uterine cavity, which it receives on its descent. The tissue of the tumor itself is entirely deprived of nerves; and I have seen a sharp-pointed probe introduced some inches into its substance, without the patient feeling anything beyond the first prick through the sensitive nervous membrane.

At no distant period was it affirmed that fibrous tumors were not vascular, and that they could not be injected: and this opinion was confirmed by the fact, that they remained uninjected, while all other parts of the womb had become quite red with injection. A preparation of this sort is preserved in the Museum of St. Bartholomew's Hospital, No. 10, Series 26. But however this art of injecting, during the last few years, has been better understood, and structures before considered non-vascular have been completely injected: and this is the case with fibrous tumors of the uterus. In the Museum of Guy's Hospital there are three preparations illustrating this fact, 2268⁸⁶, 2270, and 2266³²: in all these cases the injection has penetrated the morbid mass.

Although uterine tumors can be injected, the vessels which are distributed to them are very small and few in number; and some tumors (even in the same uterus) cannot be injected at all. The vessels which penetrate the tumor are given off

* Op. cit.

from the cellular cyst around them, which is extremely vascular: and it is from this layer that those fearful hæmorrhages arise when the tumor protrudes into the cavity of the uterus. We are thus supplied with the reason why these bodies do not undergo the changes consequent on inflammation, but only those of disorganization; for if inflammatory action is set up in the cyst and the surrounding tissues of the womb, the small vessels passing to the tumor become obliterated, the supply of blood to the tumor is cut off, and the tumor itself dies.

No veins are observed in the structure of these tumors; they only appear to be collected on their surface, where they are large and varicose: Savrard states that they are sometimes as large as the crural veins. They have been carefully injected, but no injection passes into the tumor.

Many pathologists of the highest reputation state that the hard tumor of the uterus is entirely unconnected with cancer; and some go as far as to class them with those tumors which are unable to become cancerous; while there are others equally eminent who say that these tumors are cancerous, but of the lowest type: I do not myself think that they are. The facts obtained by the daily observation of these tumors tend to prove them quite benign and harmless: they frequently exist without observation during life, nay, they may even pass to their ultimate development, viz. ossification, without giving any signs indicative of their presence: they rarely if ever ulcerate, and are quite distinct from the neighbouring tissue: they kill by the obstruction of contiguous organs, not by the extension of the disease.

The termination of these tumors is various: they may either become, as it were, dormant, and produce no irritation whatever in the parts—they may change their structure, and become converted into a bony mass—or they may produce such irritation in the uterine tissue, as to produce inflammation and abscess in it, and thus become discharged. On the first two points we have said sufficient; the latter requires remark.

This is not of a very frequent occurrence, and produces almost always fatal effects, although occasionally the patients recover. It generally occurs after labour, when the tumor has been pressed upon, and the uterus prone to inflammation. I had an opportunity of examining one of these tumors thus discharged, anatomically and microscopically: it presented all the appearance of a fibrous tumor after it had been macerated in water for some time: this patient recovered.

These tumors sometimes contain cavities in their centre; and when of a polypoid form, and the ligature has been used, operators have supposed that they have taken away the uterus itself. Mr. Hunter has left a preparation (*Uterus* 17) in the Museum of the Royal College of Surgeons, England, which displays a fibrous tumor, having a smoothly walled cavity in its structure. Mr. Langstaff gives a case where there was a large cavity in the centre of a fibrous tumor filled with blood.*

The development of these tumors is not confined to the uterus, but they are found in other parts. I have seen them in the broad ligaments, ovaries, and fallopian tubes. In the Museum of the Royal College of Surgeons, England, there is a preparation (*Uterus* 40) where there is no disease or tumor of the uterus: the fibrous tumor, of the size of an ovary, is attached by one of its margins to the exterior of the right fallopian tube.

The effects produced on the womb itself by tumors in its substance, vary very much according to their position. They enlarge the cavity considerably when they protrude into it; when placed within its walls, they almost invariably elongate and narrow it: this is well seen in the Museum of the Royal College of Surgeons, England, (*Uterus* 18), where the cavity of the uterus is lengthened to 7 or 8 inches, and is not more than a quarter of an inch in diameter. They may, however, obliterate the cavity by producing adhesions between its two surfaces: this was seen in preparation No. 4, which accompanied the Essay. Preparation 1012 in the University

* *Medico-Chirurgical Transactions.*

College Museum shews a tumor situated in the substance of the neck of the uterus, obliterating the os uteri. When the cavity is thus altered, it produces barrenness. When the tumors are situated low in the pelvis, they are often so extremely painful as to forbid coition, or even examination: and this again becomes a cause of barrenness. In fact, the greater number by far of those patients who labour under this disease never have children.

These tumors, however, very frequently do not interfere with either copulation or gestation, and the fœtus may become developed and nourished in the uterus: but we find by experience, that when these tumors are large and numerous, and conception takes place, the expansion of the uterine tissue is interfered with, the morbid growth irritates the fibre, the uterus contracts and expels the fœtus, and abortion is produced. The uterus may not take on this action, but gestation may proceed to its full period, even the child may be born, and the labour terminate favourably. Dr. Beatty relates a case in the *Dublin Journal of Medical Science*, where several tumors complicated labour: two occupied the fundus uteri, one the cervix, preventing the finger being passed between it and the pubis; and yet with all these obstacles nature was enabled to bear the child, the tumor being drawn up above the brim: the mother was taking carriage exercise five weeks after delivery. But this is the exception, and not the rule. Many are the cases recorded where the child has been expelled favourably, and yet frightful hæmorrhage has carried off the mother; and many others, where the mother has survived a few weeks, to die from the effects of inflammation. Hæmorrhage is the immediate danger, resulting from tumors being complicated with labour; but its ultimate effects are, breaking up of the tumor, inflammation, and abscess of the womb.

Symptoms produced by Fibrous Tumors of the Uterus.—The symptoms particularly referable to tumors of the womb are by no means definite or pathognomonic. Sometimes this disease may exist, and only a little leucorrhœa be present, and the

morbid product not ascertained until after death: at others, there is a sense of burning heat in the pelvis, running down the thighs, irritability and uneasiness about the rectum; the stomach is disordered, and it is said there is great venereal excitement. The mind becomes affected; there is melancholy, and all the symptoms of hysteria: very frequently there are expulsive pains—and, when present, are considered of great diagnostic value by M. Lisfranc. If you question further, you will find that the functions of the bladder are interfered with; and this perhaps was the first symptom which drew the attention to the womb: a hard tumor can be frequently felt above the pelvis, œdema of the legs is present, and there is a deep-seated weight in the pelvis.

The particular symptoms vary greatly with the situation of the tumor: 1st, Those tumors which are placed under the peritoneal surface can be distinctly felt by the hand on external abdominal examination: they may be either smooth or lobulated, and generally, though not always, have a fixed character; but when they possess a pedicle, and it is long, they can be moved about the cavity of the abdomen like a diseased ovarium. If their growth is rapid, they are accompanied with indurations of the uterine tissue around their seat; you then have great pain on pressure, with symptoms of general disturbance, more or less fever, with quick pulse, thirst, and derangement of the digestive system. These symptoms are so frequent when the tumor occupies this position, as almost to be pathognomic of the disease. 2ndly, If the tumors are placed in the posterior or lateral parts of the uterus, the early symptoms are more distressing; you have then great pain from pressure on the pelvic nerves, the veins in the abdomen become pressed upon, œdema and varicose veins shew themselves, more particularly on one side, sometimes on both; piles are produced; the evacuations of the rectum are interfered with, the fæces are flattened, and constipation, frequently the most obstinate and troublesome symptom, is present, and produces inconveniences we can hardly obviate. 3rdly, If the tumors are placed in the

anterior walls of the uterus, the functions of the bladder become more particularly implicated: the urine can be retained only for a short time; there is almost constant desire to make water, although only a small quantity is evacuated. At other times retention of urine occurs, which is relieved by change of posture or the catheter. Piles are a very frequent accompaniment of tumors of the uterus. 4thly, If attached to the fundus, it may cause retroversion of the womb (Clarke), and prevent the evacuation of fæces and urine at the same time. Dr. Lever* relates a case of this sort, "where the obstruction had been so great, that the bladder, ureters, and pelvis of the kidneys were enormously distended, whilst the bowels were loaded with masses of hard fœculant matter."

2. When the tumors are placed in the walls of the uterus, these symptoms are much more obscure, until they obtain consideration from their bulk. In many instances, the only symptoms at all referable to the uterus are, a weight in the seat of that organ, with occasionally a burning sensation, accompanied by an increased mucous discharge: this may remain for years without producing any further inconvenience, until some cause or other produces irritation; it then increases and produces all the symptoms of pressure on the neighbouring organs, which have been already referred to. When in this position, they may even become osseous without attracting attention.

3. Tumors projecting into the cavity of the uterus are much more serious in their nature, and produce more immediate effects, than those just described: of these there are two varieties—1st, Those which retain their character as tumors, but project into the cavity of the uterus. 2ndly, Those that lose that character, project so far as to obtain a peduncular attachment to the womb, and in fact become polypoid tumors. These latter, with their symptoms, will be noticed when speaking of polypi.

When the tumor is submucous, and only projects into the

* Guy's Hospital Reports.

cavity, and not so far as to become a polypoid tumor, the first symptoms usually observed are those connected with derangement of the function of menstruation: the patient finds that the periodical discharge is increased in its quantity, lasts longer than usual, and is followed by a more or less white discharge. This may or may not call attention to the uterus: but soon the symptoms are aggravated, the quantity of discharge is not only increased but contains clots, a considerable portion of blood is lost at each period, and these occur more frequently, until at last the constitution begins to suffer.

The menstruation is variously affected in regard to tumors of the uterus. Thus, when the morbid growth is situated in the walls of the uterus, that function may be natural at first, and remain so up to a late period in the disease; but when it projects into the cavity of the uterus, it invariably gives rise to bleedings to a greater or less extent, which usually occur at the menstrual periods.

When the tumor projects into the cavity of the womb, the patient is greatly harassed by expulsive pains: these may be almost constant, but generally intermittent; they simulate labour pains, and, when absent, leave a dragging sensation in the back and loins, running down the thighs. They most usually occur when the menses are about to make their appearance, and continue until they have ceased: they are so severe as to incapacitate the patient for her usual duties. The uterus is found to be very large, and when the tumor can be touched it produces great pain: this pain, however, depends not upon the tumor itself, but from the sensitive mucous membrane which covers it. I have seen a sharp-pointed probe introduced some inches into the substance of these tumors without producing any pain, except that arising from the puncture of the mucous membrane.

These general symptoms may occur from other causes than from tumors of the uterus, and therefore are not indicative of this particular disease: we must be aided by other means, and the principal of these is *Examination per vaginam*.

Upon examination we have three indications before us: 1st, To ascertain the character of the os uteri and neck of the womb—2ndly, The weight, with the mobility or immobility of the uterus—and 3rdly, Whether the uterus is connected to any mass previously felt above the pubis.

Tumors of the cervix uteri are very rare, but when placed in that position they distort the os uteri, which can very rarely be felt: when anterior, they bulge over the opening, and throw it upwards and backwards; when posterior, the opposite result is produced. These tumors can be traced into the substance of the womb; there is no pedicle, but an apparent elongation of one of the lips. The tumor itself does not arise in the tissue of the cervix, but above it, and pushes that structure before it, in its descent. Clarke and Burns have noticed this fact, and in Preparation *Uterus* 19, in the Museum of the Royal College of Surgeons, it is observed. Tumefaction of the cervix usually arises from inflammatory action, or its deposit.

In tumors of the cavity sometimes the os will be felt open, with a protruding mass between the lips, very sensitive, and which can be traced into the cavity; at others the os will be closed, and the neck will become expanded and lost in the substance of the womb, as in pregnancy.

When the tumor occupies the posterior wall, it usually pushes the os very much forward, under the pubis, sometimes so much so as to be with difficulty felt: at other times the neck of the womb lies closely attached to the under-surface of the tumor, but so compressed that the uterine sound is unable to be passed. The observation of these peculiarities, which are produced by fibrous bodies, on the neck of the womb, is very important; for, as we shall see, it is by them we are able to judge of the increase or decrease of the tumor itself; for if the tumor increase, still less of the neck will be felt; and if it decrease, it will become more developed and natural, occupying also its proper position in the pelvis.

The second indication is to ascertain the weight, mobility, &c. of the uterus. In a properly balanced uterus, and one

free from disease, we are hardly sensible of its weight when thrown up on the top of the finger. The weight of a virgin uterus is about an ounce; and after the woman has borne several children, it is seldom more than one ounce and a half or two ounces, and is distinctly moveable in all directions; but when distended by pregnancy or a foreign body, there is a sensation of fulness perceived just above the neck, it bulges out towards the rectum and bladder, and when pushed upwards and allowed to fall upon the finger, there is a distinct sense of weight. Where a fibrous tumor exists, the vagina is generally much lessened in its length, a hard mass is felt, sometimes resting on the perineum, almost immoveable, but when moveable it is heavy; and pressure from below is generally communicated to the hand placed above the pubis. Thus the lessening of the vagina, the hardness of the mass, the bulging of it into the rectum, and the communication of the pressure from below to the hand above, gives good evidence of a fibrous tumor.

When a tumor is distinctly felt above the pubis, we ascertain its connexion with the uterus by tracing it down into the pelvis, by drawing the tumor upwards, and observing the changes produced on the uterus itself, and by the introduction of the uterine sound, the handle of which will move with the corresponding motions of the tumor.

A great advance in the means of diagnosis of diseases of the uterus, has been gained by the introduction of the uterine sound by Professor Simpson, of Edinburgh. This instrument has the appearance of a small male catheter, with a bulb at one extremity, and fixed in a handle at the other: it is marked by an elevation at $2\frac{1}{2}$ inches from the extremity, that being the natural length of the cavity of the healthy uterus, and is then graduated with inches, in order to ascertain the length of the cavity of a diseased one. When the instrument is passed to its full extent into a healthy uterus, you can elevate the fundus above the pubis, turn it from side to side, and also through it down upon the rectum: these movements

shewing the healthiness of the organ: therefore if they can be made while a tumor exists in the abdomen, it proves that the uterus itself is unconnected with it. In speaking of this instrument, Professor Simpson says, "But if a tumor is connected to the walls of the uterus, the sound will appear as if it passed into the mass, which will move with all the movements of the instrument, and the uterus itself will be found intimately attached to it; whereas, supposing the tumor unconnected with the uterus, we should be able to perceive that the uterus is moveable and free, and could be thrown down towards the rectum, and easily detached from the tumor."

The cavity of the womb is generally elongated in tumors of the uterus; but this is not always the case. I have seen several morbid preparations of fibrous tumor of the uterus, where the cavity has either been natural, or where it has been shortened: this was well seen in preparation No. 4, which accompanied this Essay to the College; there the tumor had so pressed the sides of the cavity of the uterus together, as to cause adhesion between its surfaces—but it is generally elongated. Preparation 17 in the Museum of the Royal College of Surgeons, England, shews an elongated cavity—from fibrous tumor in its walls—of 7 inches in length. I have seen the uterine sound pass from 5 to 6 inches in the living subject, and felt it distinctly just below the umbilicus. But elongation may be found in the cavity of the uterus from other causes—from the elevation of the cornua by ovarian dropsy; this took place under my notice, and was verified by a post mortem examination, when we found the uterus healthy, but the left cornua pulled up by a large ovarian cyst. We must therefore bear in mind that the cavity may be shortened, and a fibrous tumor exist, or that it may be elongated and healthy: but if you find an elongated cavity, with other corroborative symptoms, in the majority of cases you will make a correct diagnosis.

This, then, is an important addition to the previous modes of investigating diseases of the womb; and when the profession

becomes more acquainted with the instrument, the diagnosis of abdominal tumors will be more correct.

Diagnosis of Tumors of the Uterus.—There is very little difficulty in detecting a hard round circumscribed tumor of the fundus of the uterus in an old woman in the decline of life, and with thin abdominal parietes; but the difficulties are vastly increased when we are called to give our opinion of a swelling in the uterine region in a young girl, just advanced into womanhood: here the diagnosis is very difficult, and requires every attention.

The age of the patient was supposed to have been a good diagnostic mark, and one which, accompanied by other symptoms, would lead to a definite conclusion. This opinion was formed from the statement of Bayle, "that these tumors are never developed before the thirtieth year." But this statement has been found to be incorrect. In a case I have seen the symptoms commenced in the twentieth year; there is now one under treatment twenty-eight years old; Mad. Boivin has seen one case in a girl eighteen, and another in a patient twenty-five years old. So that, although usually these tumors do not develop themselves until a tolerably late period in life, we must remember that they may occur much earlier.

We have before stated that there are no definite or pathognomonic signs by which these tumors can be detected; and, in fact, the negative evidence of the non-existence of other disease is frequently the most important. We must therefore be intimately acquainted with those diseases or states, which may be confounded with the one under discussion—and to this subject we will now refer.

I. *Indurations depending on an inflammatory state of the Uterus.*—The symptoms accompanying this disease are identical with those of morbid products. A patient complains of a swelling and circumscribed hardness above the pubis and in the uterine region, painful on pressure, either smooth or nodulated, accompanied with expulsive pains, the pulse frequent, and face flushed: there may have been hæmorrhage more or less profuse,

and the catamenial discharge greater, although at its accustomed intervals. On examination we find that the uterus is large and heavy, and pressure on the tumor above depresses the uterus. These symptoms may all arise from mere induration of the uterine tissue, and yet are identical with those produced by fibrous tumor. The difficulty of diagnosis between these two diseases is so great, that it led M. Lisfranc to believe that they could not be distinguished, except when the fibrous tumor became polypoid. But in inflammatory action of the uterus the constitutional fever appears at the commencement of the disease, almost before the swelling; while in fibrous tumor the mass is distinctly felt before the constitutional symptoms arise: there is also great pain on pressure. In hard tumors the swelling is more defined, and they are not usually painful on pressure. But the most diagnostic mark between these diseases is the effect of treatment on them. If the one yields to treatment, it may then be considered to depend on induration; as fibrous tumor has, according to some, never been reduced.

Many doubt the existence of these indurations, and suppose them to be *bonâ fide* tumors of the womb, and their dispersion the proof of the curability of these growths. But on the existence of this state M. Lisfranc says, "Reason, analogy, and experience prove these opinions to be correct. For if an inflammation can attack the neck of the womb without involving the body, why should it not exist in still more limited points of this organ, and why should they not be susceptible of terminating in hard engorgements, more or less rounded and circumscribed? We see phlegmonous inflammation of the thigh disappear almost entirely, and leave here and there isolated indurations more or less rounded and circumscribed. Could it not be so in acute inflammation of the whole uterus? In *post-mortem* examinations of women dying of metritis I have found these facts. I have met with abscesses in the walls of the uterus, around which are engorgements perfectly rounded and circumscribed. I have found uterine indurations, rounded

and circumscribed, offering at their surface lumps and irregularities, like the fibrous tumor, of whose consistency they partake." The effect of treatment then is the best diagnostic sign between these diseases.

II. *Uterine Tumors are frequently mistaken for Pregnancy.*
—In all cases of enlargement of the womb the breasts are the first organs to sympathise with its development; and this is more especially seen in the young, and those who have never borne children: so that whether the cause of the distention be the retention of the catamenia, or tumor of the uterus, the mammæ become developed and enlarge to a certain extent, as if nature were providing nutrition for the young. But in pregnancy the nipple and surrounding parts undergo certain changes which are peculiar to that state, and although not infallible, still are very conclusive. These changes consist of an œdematous appearance of the areola and nipple, with a darkened portion around the nipple, and an enlargement of the follicles. Some or all of these changes, as far as my experience goes, (and I have taken notes of more than one hundred patients,) are always present; in two only of the hundred was there neither areola or follicle, but the œdematous state of the nipple existed to indicate pregnancy. But some of these signs not only belong to pregnancy, but also to disease, and consequently ought to put us upon our guard. I have noted carefully the appearances of the breasts in ten cases of fibrous tumors, and I have almost invariably found the following characters. That at the commencement of the disease, or when it had produced such irritation as to cause the patient to apply for medical advice, I have found that the breasts have, in the great majority of cases, been enlarged and tumid; that the areola has, in eight cases out of ten, been enlarged and darkened; that in the same number the follicles have been more or less numerous—in some they have been remarkably distinct: but that in only one case out of ten was there any moisture or œdema of the nipple or areola present—and this was a suspicious one, as the patient never came back

after the first consultation. All these cases were under observation a considerable time, except the last, and therefore we are positive that in none pregnancy existed. In one case also the patient obtained, by squeezing the nipple, a whitish fluid resembling milk.

The absence of these signs about the nipple are of the greatest importance in our diagnosis; but other points also deserve notice. In pregnancy the womb has a peculiar elastic doughy feel, perfectly regular on its surface, and ovoid in its shape. The foetal heart can be heard beating about the umbilicus, and the placental murmur is usually heard in the left iliac region. But in disease the tumor is irregular, and of stony hardness; no placental murmur nor foetal heart is heard. The beatings of the aorta may be observed with distinctness, as in case No. 1; but it can be easily distinguished from the foetal heart, as it is a single sound, and synchronous with the pulse. In tumors of the uterus the catamenia are present, and usually increased, whilst in pregnancy they are absent; and if any spurious discharge takes place, it is scanty.

The case (No. 1) I have appended to this chapter illustrates well the fact, that pregnancy is frequently mistaken for fibrous tumors. This patient had a particular desire to be pregnant; she had been married seven years, but had had no offspring. Two years before she came under my notice she had felt slight movements in the abdomen, her breasts swelled, the veins became enlarged, follicles appeared, and from the irritation she used to her nipple to obtain milk, actually produced the discharge of a whitish fluid: this confirmed the opinion she entertained of her puerperal state, and she engaged medical men to attend her. When I saw her, an assistant of a medical man was in attendance. On my arrival I found that she had pretty strong periodical pains, supposed herself in hard labour, and voluntarily asked me to see the milk from her breast: this latter circumstance caused me to be suspicious. I examined *per vaginam*, and found the os uteri healthy, and the neck of the uterus of its proper size: there was also on the left side

a hard fibrous tumor, which could be felt externally. I now examined the nipples, but found that the areola was not much heightened in colour; there were only a few abortive follicles, and no œdema either on the areola or nipple. The movements she felt on the left side were the strong beatings of the aorta. And after a little persuasion I dissuaded her from her mental hallucination.

III. *Ovarian Dropsy may be mistaken for Uterine Tumors.*—In ovarian disease, the tumor formed by the ovary is much more rapid in its growth, is much more moveable, and produces much more constitutional disturbance, than the hard tumor of the uterus. Its position in the abdomen is different: and if we enquire into the history of the patient, we find that the disease commenced in one side, and not in the centre of the abdomen. By examination *per vaginam*, we find, on applying the finger to the os uteri, that the tumor above does not communicate its pressure as it would do if the tumor were connected to the uterus. The ovary, when diseased, is much more moveable than when the uterus is the seat of tumor. If the uterine sound be introduced into the cavity of the uterus, and the disease be ovarian, the body of the uterus can be moved entirely away from the diseased mass. In uterine disease the os uteri is pushed downwards into the vagina, and the body of the organ itself is felt to be heavier than natural; but if the ovary be diseased, the vagina is usually elongated, of a funnel shape, and the os is with difficulty felt; the uterus itself is found tilted to one side. Ovarian tumors, however, may be so attached by adhesions to the uterus, and so firmly connected to it, that it is almost impossible to state, with any feeling of confidence, which is the organ diseased. This occurred in case No. 5, where the tumor fixed the uterus, and was mistaken for a uterine one.

IV. *Abdominal Tumors may be mistaken for Uterine Tumors.*—These more usually arise in the fold of the omentum: they may possess the same structure with the tumors of the uterus, and may even pass on to ossification. In one of Mr. Howship's

preparations in the Museum of the Royal College of Surgeons, England, he was unable to decide whether the tumor he prepared belonged to the uterus or omentum, such was their resemblance. The great means of diagnosis between tumors of the uterus and those of the abdomen, is the proper employment of the uterine sound. We have already stated, that in the healthy state, and not in a habit too full, the uterus with this instrument can be brought completely under the surgeon's examination; whereas, where the uterus is diseased, vastly different signs are produced. "When the tumor which is present is uterine," says Dr. Simpson, "and consists either of some general or partial enlargement of that organ, we have usually been able to gain satisfactory evidence of the fact by the bougie, when passed into the uterine cavity, entering, as it were, more or less directly, into the very structure of the morbid mass; and by the tumor and instrument afterwards, reciprocally moving, in exact correspondence, with all the possible motions, imparted respectively to each of them. In other instances, where the tumor is not uterine, we have repeatedly made ourselves and others certain of the fact, by first introducing the bougie, and so far giving us at once a knowledge of the exact position of the uterus, and a controul over its movements, and then proceeding in one of three ways. 1st, The uterus may be retained in its situation with the bougie, and then by the assistance of the hand above the pubis, or by some fingers in the vagina, the tumor, if unattached to the uterine tissue, may be moved away from the fixed uterus. 2ndly, The tumor being left in its situation, it may be possible to move away the uterus from it to such a degree, as to shew them to be unconnected. 3rdly, Instead of keeping the uterus fixed, or moving the tumor—or fixing the tumor and moving the uterus—both may be moved simultaneously, the uterus by the bougie, the tumor by the hand or fingers, to opposite sides of the pelvis, to such an extent, as to give more conclusive evidence of the same fact."

I can testify to the advantages of this means of diagnosis,

being in the habit of frequently testing its efficacy in cases where no other means of diagnosis would be so satisfactory. But great care is required in its use, the indiscriminate application of the sound I have seen produce abortion in more cases than one. After rough manipulations with this instrument, I have seen in two cases violent inflammatory peritonitis ensue; and inflammatory action is set up in some cases after the most careful introduction of it in the cavity of a uterus where there were fibrous growths.

V. Polypi in the Uterine Cavity may be mistaken for Uterine Tumors.—These are, however, soon discovered by the large bleedings they produce, and by examination; however they sometimes arise at the uterine neck, and pass upwards into the cavity, (there is a preparation of this kind in the Museum of the Royal College of Surgeons, England): if in that situation they may readily simulate fibrous tumors.

The Treatment of Uterine Tumors.—In the great majority of cases these growths do not require any particular medical treatment; they frequently remain in a quiescent state for years, and we have mentioned one where the patient died when she was ninety-one, and had suffered, more or less, from a fibrous tumor, thirty-one years. But this favourable result is not always to be anticipated; a blow, venereal excitement, and the effects of labour, produce such changes in the uterine tissue, as to induce inflammation and its consequences; and it is under these circumstances that we are called upon to treat the disease.

Some imagine and have stated, that fibrous tumors cannot be entirely reduced, and that nothing but palliative treatment ought to be tried. But, however, Sir C. Clarke states that he has seen a tumor of the uterus become absorbed; and Dr. Ashwell gives another case where it entirely disappeared. Again, it may be cured by expulsion: although this process is usually very hazardous to the patient, many survive.

When this disease comes under our notice, it is usually on account of some inflammatory process set up around the

morbid growth; and I have invariably found that the judicious use of antiphlogistics are the most speedy means of giving relief.

Local depletion, by the aid of leeches, is the best method of treatment; but these must be applied to the tumor *itself*: in a robust patient, of bloated habit, with great pain in the tumor, and with the signs of local congestion, as piles, the application of six leeches twice a-week to the neck or body of the womb will not be at all too much; but if the patient is anemic, one application weekly is sufficient. The introduction of the leeches to the tumor itself is of great importance: I have seen relays of them applied to the perineum, rectum, and groins, be of little use, while one depletion from the tumor itself has been of the utmost service. A hip bath, after the leeches come away, is very beneficial; it encourages the bleeding and relaxes the parts, and by these means removes the excessive pain which is usually present.

During the intervals of the leechings, mercury or iodine should be applied to the womb itself, either in its pure state, or made more consistent with wax. The ointment used at the Red Lion Hospital for women is mixed with one part of the Ung. Hyd. Fort., one part of Cera Flava, and one part of lard. This is rolled up in the form of a ball, and introduced into the vagina every night, as high up as possible, in order that it may envelope the os and cervix of the uterus: this remains for twenty-four hours, when it has generally disappeared—it may then be repeated.

I can strongly recommend this plan of local depletion with the application of mercurial ointment; of course it requires judgment to adapt it to the various cases which come under notice, but in all cases where it is judiciously applied it improves the patient.

The symptoms which arise after the application of this plan, and those which show the benefits derived from it, are, that the cervix uteri becomes much more distinct and developed: so that whereas before we could only by careful examination dis-

tinguish the os uteri, now the cervix bulges below the tumor; and, as before, the cervix had been pushed towards the pubis, so as hardly to be felt, now it gradually descends into the cavity of the pelvis, and perhaps occupies the centre. Another good indication that the tumor is less, is, that it often rises above the pelvis into the abdominal cavity; so that as before you had a hard fixed mass pressing on all the organs of the pelvis, now they become relieved, and the tumor gives but little trouble.

Dr. Rigby has carried this plan still further: not only does he envelope the os and cervix uteri with the strong mercury ointment, but he dissolves the ointment, and after having drawn it up into a catheter, injects it into the cavity of the womb. He tells me that this is a great additional advantage, and that he has some cases under his care where, in one case in particular, the tumor, which formerly was one large, hard, solid mass, is now separating into distinct parts, and becoming gradually less.

Constipation is almost a constant accompaniment of this disease, and the mildest cathartics should be used to obviate it. A good form is that of combining a tonic with a cathartic—as the equal parts of the Infusion of Gentian and Senna—two or three times a-day, as the case may require; and if the appetite is failing, a few drops of the Nitric Acid Dil. is a good addition.

Mercury, given by the mouth, was once prescribed, but is now almost discarded in the treatment of this disease: it appears to injure the health, produces great weakness, and depresses the spirits of the patient. I have never seen any bad effects from its actual application to the womb; it has never affected the mouth, although large quantities have been applied, nor has it produced that languor and depression peculiar to the remedy.

Iodine, given internally and by inunction, has been greatly praised as a remedy in these cases, and more particularly brought into practice by Dr. Ashwell. This is to be given

when the inflammatory symptoms have subsided, in the form of ten drops of the Iodine in a glass of water three times a-day; to be gradually increased to as much as the patient can bear. The unguentum Iodinæ may be rubbed upon or over the tumor night and morning. During the administration of this medicine, great care is necessary in preventing it acting injudiciously upon the system: if sickness arise,⁹ or emaciation take place, with head-ache and a sense of sinking, it ought to be suspended for some time.

This remedy has the power of stopping the increase of these bodies: it has been greatly lauded by Dr. Ashwell, and he has published many cases of its efficacy in Guy's Hospital Reports; but I have not at present seen those decided results I had expected from it. I am now treating a patient who has taken ten drops of the Tincture of Iodine three times a-day for the last six months, (occasionally suspending its use for a time,) and has also rubbed in the ointment to the groins, and had it applied internally; and I find, that although the tumors have not increased, but rather diminished, the functions of the bladder are much less interfered with than they were, so that she has given up the use of the catheter, and expresses herself lighter and much better: nevertheless, the tumors are still there.

The action of iodine is more marked where there is tumefaction and hardness in the neck of the womb: in one case of this kind I was very successful, the patient being entirely cured.

Dr. Walshe has confirmed the testimony of Dr. Ashwell as to the efficacy of this remedy; but Dr. Lever has not seen the benefit arise from its use that has been described: he says, "As far as my experience has gone in the treatment of this disease, I have never found the full and free exhibition of iodine followed by the absorption of the hard fibrous tumor, when I was convinced that such was the disease under which the patient laboured. I have, it is true, seen a stop given to the growth of the tumor after the exhibition of this remedy, although previously its increase might have been rapid." We

are all aware of the difficulty of treating these tumors; and if Iodine only tends to put a stop to their growth it is well worthy of trial, as it prevents the more serious effects of pressure from the tumor, and it prolongs life with a greater degree of comfort.

Chloride of Lime has been proposed as a remedy, but I have not seen it prescribed sufficiently frequently to come to any result conclusive as to its effects.

It has been a question lately mooted, Whether it would not be justifiable to irritate the tumor in order to cause its expulsion? and if this object fails, it is supposed that the irritation produced will cause ossific degeneration. The former is a dangerous experiment; for although many recover after such expulsion, the period of the process is one of great danger to the patient. If the latter object could be obtained, it would be the most useful; when a tumor takes on bony degeneration it always becomes much less in size, and consequently relieves those symptoms arising from its bulk.

When these tumors are attached to the neck of the womb, or project into the cavity of the uterus, so as to be distinctly distinguished, it has been proposed by M. Lisfranc to enucleate them. This is done by freely dividing the mucous membrane that covers them, and with the fingers or end of the scalpel separating them from their attachments. These operations under his hands, he states, have been very successful. Whatever form of treatment is pursued, we must endeavour to sustain the general health by the effects of good air, exercise, and generous diet. We must obviate any inconvenience that may arise from the pressure of the tumor—as constipation and retention of the urine—by glysters, aperient medicine, and the catheter. If the tumor is moveable, we ought to elevate it above the brim of the pelvis; and this effectually provides against pressure on the organs in that cavity.

In very many cases we must be content with palliative means; we must caution our patient against accidents of all kinds, and especially against the excitement of the uterine

organs. If pregnancy exist with these tumors, we shall find it a serious complication, both immediately after labour, in consequence of hæmorrhage, or during the discharge of the tumor. These dangers are so great, that it has been a question, Whether we should allow pregnancy to proceed to its termination? Dr. Ashwell has answered this question in the negative; he induces premature labour, and the success which follows this treatment fully justifies the proceeding.

Such, then, is the sum of the treatment of this disease: we must obviate local congestion, stop the increase of the tumor by leeching, application of Mercury or Iodine, if possible avoid everything which will induce irritation of the uterus, and if the patient be pregnant, act upon the old obstetric rule, of saving the mother without reference to the child.

CASE (No. 1).—*A Tumor in the Walls of the Uterus.*

Peculiarities.—Symptoms resembling pregnancy, mistaken for it. Patient in good health.—Mrs. R. ætat. 48, married, but never had children: has enjoyed good health up to two years ago, when she had fever; after which she began to swell in the abdomen. She supposed herself pregnant: the breasts became swollen, there were movements in the abdomen, she was occasionally sick, the veins of the legs became enlarged, and very shortly she squeezed out of the nipple a whitish fluid, like milk: this confirmed her opinion, and she engaged a medical man to attend her. I was called to her six months ago, when the assistant of a medical man was in attendance, supposing her to be in labour; the pains were regular and simulated labour pains: but on enquiry I found she had been suffering for a year and a half in the same way. On examination I found the os uteri small, the cervix quite developed, and a large fibrous tumor situated in the left side of the fundus of the uterus. I have seen her several times since, and she is now convinced that she is not pregnant.

CASE (No. 2).—*A Tumor in the Posterior Walls of the Uterus.*

Peculiarities.—Menstruation always scanty. Retention of urine. Uterine sound passes $4\frac{1}{2}$ inches, and can be felt below the umbilicus. No bleedings. No pain is felt on puncturing the tumor.—Sept. 1845. Elizabeth E., ætat. 29, single; admitted under Dr. Rigby into Red Lion Hospital, Sept. 1845. Her health has always been delicate, but never had a severe illness. She first observed her complaint eight months since, when there was sudden retention of urine, and great irritability of the bladder. Since then has suffered much with pain in the back and loins, which is greatly increased at the menstrual period. The urine has been obliged to be drawn off by the catheter, which she now uses herself.

Ex. per vag. The cervix uteri appears to be taken up into the uterus, and is driven forwards and much compressed between the symphysis pubis, so that it could hardly be found. There is a hard globular tumor situated in the posterior wall of the uterus, occupying the whole cavity of the pelvis, and is so fixed, that it is unable to be moved; it is tender on pressure. There is no discharge. Six leeches, twice a-week.—Oct. 25. Has continued to apply the leeches, and the bowels are regulated by medicine. Catamenia has been present with great pain, and a small quantity of discharge: never has had any bleedings. She makes water much better. The tumor is not quite so hard. Dr. Rigby introduced a sharp-pointed probe into the tumor; pain was given on its introduction through the mucous membrane, but its further progress gave no pain whatever.—Dec. 9. Has continued the leeching once a-week: the tumor is decidedly softer, and the neck of the uterus much longer, and occupies a more central position on the pelvis. The uterine sound passes upwards and forwards to the extent of $4\frac{1}{2}$ inches; its point can be felt just below the umbilicus, as it were in the mass of the tumor. On moving the tumor you distinctly move the handle of the sound. The examination gave great pain. Continue the leeches, and apply the mercurial ointment

to the tumor every other night.—March 16, 1846. Is much better: has now no occasion for the catheter; passes her water naturally, and holds it a moderate time. Has still great pain when the catamenia are present. Tumor less.—May 1. The tumor is much less: it passed into the abdomen by its own force; it can be replaced in the pelvis, and then thrown into the abdomen with ease. She is much better, but still has great pain during the catamenial periods: the discharge is greater in quantity. The same plan of treatment is being pursued; her health is good. Still under treatment.

CHAPTER II.

ON POLYPI OF THE UTERUS.

A POLYPUS is a tumor growing from the internal surface of the uterus, attached to it by a stalk, and usually having a pyriform shape: it is smooth, hard, and insensible, and gives rise to violent and frequent hæmorrhages.

The seat of these bodies varies. They may arise from any part of the internal uterine surface, but most usually do so from the posterior surface of the cavity and fundus, and near to the openings of the Fallopian tubes. M. Lisfranc states that he has found this to be the case in forty-three cases out of sixty; and my observations confirm his opinion. Some few arise near to the os uteri, while others are attached indefinitely to the cavity and cervix.

Their size is also very variable, ranging from a small millet-seed to an orange, and from that to a body much larger than the fœtal-head. A very large polypus is seen in the Museum of the Royal College of Surgeons, England, (*Uterus* 19), which during life had protruded from the vulva, and had extended to the knees of the patient.

Polypi are generally *single*, but sometimes there are more than one at the same time occupying the uterine cavity or neck. This fact ought to be borne in mind, as it is often a source of disappointment; for after the surgeon has successfully tied one polypus another may appear; and he may suppose that the pedicle of the former one had grown again—which circumstance never occurs. In one of my preparations there are three polypi situated in the neck of the womb. M. Lisfranc has met with one case where five, and another where six polypi occupied the uterine cavity.

Sometimes two distinct polypoid growths arise from the same stalk or pedicle which attaches them to the uterus. This peculiarity is observed in preparation 2661⁴⁰, in Guy's Hospital Museum.* Again, one polypus may have two insertions into the uterine substance: Dr. Lever mentions a case of this kind.

No age is entirely free from these polypoid growths. M^{de}. Boivin states, that Psaff operated on a child two years old thrice for polypi, and at last cured it. Lisfranc has taken away a cellulo-vascular polypus from the uterus of a girl eight years old. Desault has operated on one at fifteen years: but the more usual period for the formation of these bodies is between thirty and forty. M. Malgaune has given a table, which he collected from all the Theses of the Faculty of Medicine at Paris, written by Levret, Herbineaux, Roux, &c., and he finds that

				Years.	
4 cases occurred between				26	and 30,
20	.	.	.	30	. 40,
16	.	.	.	40	. 50,
4	.	.	.	50	. 60,
3	.	.	.	60	. 70,
4	.	.	.	70	. 74.

The causes which give rise to these growths are very obscure. They are found to exist in the married and unmarried; and Dr. Lever thinks that they are more prevalent in the latter than in the former. They generally attack the weak and those of sedentary habits; they are usually preceded by "whites": and M^{de}. Boivin states, that when polypi are present, the catamenia have generally appeared early and in abundance, accompanied with membriform exudations. In some cases in which I enquired for these particulars, the catamenia had never been profuse, nor had any membranous discharge taken place: this latter symptom also is frequently seen in those who are suffering from disease of the ovary, and who never become subject to polypoid growths. Unnatural sexual excitement and irritation has been considered by many a direct and very frequent cause

* Where "a polypus is seen growing from the cervix uteri, with a pedicle as long as a goose quill, and two heads, the size of hazel-nuts, which have escaped from the os uteri."

of polypi. M. Lisfranc states that Chaussier held this opinion, and had tried to prove it experimentally, by establishing a permanent or intermittent irritation on the mucous membrane of the womb: "whence," says he, "arise, first, a local engorgement; secondly, a swelling, then elongation of the vascular ramuscles and of the laminous tissue, and at last a polyp." Segar has seen him produce these tumors by rubbing the mucous membrane: organized mucous soon attaches itself to the mucous membrane, by which it is secreted, and then becomes a polyp. Although no doubt this may be a cause of the production of these tumors, it must not be considered the principal one; for we have seen that a true uterine polypus has been tied in a child two years old. Seibold has observed them existing at the same time in the case of a person in whom the hymen was perfect: and lastly, Dr. Lever finds that the disease is more frequent in the unmarried than in the married, in the proportion of seven to three.

Polypi generally proceed downwards towards the vulva, resistance to their growth being less in that direction; but they sometimes grow upwards into the cavity of the womb, as in a preparation of Mr. Hunter's in the Museum of the Royal College of Surgeons, England, (*Uterus 3*), "where a fibrous polypus is attached to the posterior wall of the cervix, and has grown upwards into the cavity of the uterus, to the elongated and flattened form of which it has adapted itself." Mr. Warren* relates a case where a polypoid tumor commenced at the os uteri, entered the cavity of the womb, and actually distended it.

Their form usually depends upon the kind of pressure they are subject to: when entirely within the cavity of the uterus they assume its form, become flattened out like a bean, and are rarely globular; whereas, after they have escaped from that organ into the vagina, they acquire a wider range for their growth, take upon themselves its figure, and often present the form of a mushroom in appearance: they are usually pyri-form, globular, or ovoid, when they are presented to us.

* Warren *On Tumors*.

In the consideration of Polypi, I shall divide them, according to their structure, into polypoid tumors—that is, when the tumor of the uterus takes a polypoid form—and into soft polypi, when the structure is of a less compact nature.

I. *Polypoid Tumors*.—These are usually described as the fibrous polypi, and are perhaps more commonly met with than any other species: this assertion, however, is disputed by many, although experience and museums testify to its correctness. In noticing fibrous tumors, we have observed that a certain position for their growth was between the mucous membrane and the uterine tissue. In that position they may only project slightly into the cavity of the uterus, and become dangerous only from the effects of pregnancy or other uterine excitement: or uterine action may be produced from the existence of this foreign body irritating its fibres; contractions may then ensue, and the tumor may be gradually protruded into the cavity of the uterus, pushing before it its mucous membrane in the same way as the intestine produces a hernial sac in rupture. The tumor in this situation continues to increase: it enlarges the cavity, and at last, by the continued and powerful action of the uterus, it is expelled into the vagina.

Pathology of Polypoid Tumors of the Uterus.—Pathological appearances of these tumors present the same characters as those of the uterus; in fact they are identical, as is well seen in the Museum of the Royal College of Surgeons, England, (*Uterus* 42), “where a polypoid tumor has been removed, and its internal structure is the same as that of a tumor of the uterus.” In the drawing, No. I, fig. 2, this fact is beautifully displayed. This represents the tumor taken from case No. 3, which shows a polypus, composed of two small fibrous tumors of the uterus, *a* and *b*, surrounded by a cellular cyst, and covered with the mucous membrane of its cavity. In St. Thomas’s Hospital museum there are two preparations, 1875^A and 1873^B, which also display the same structure.

These tumors, identical with those of the uterus, are covered when in a polypoid state by the mucous membrane of the uterus;

the irritation which their constant pressure produces, causes it to become thickened, and, generally speaking, it can be traced over the whole surface. M. Lisfranc has also described an envelope, composed of blood-vessels, passing over the surface of the tumor, and when present it gives rise to large bleedings; some of the vessels from this structure dip into the substance of the polypus. They have also a distinct cellular envelope, which loosely attaches them to the surrounding tissues, so loosely indeed, that they can be turned out of their bed with but little force. Besides these coverings, we often find the muscular tissue of the uterus enveloping them, more or less,* in some cases entirely, in others the pedicle, and a small portion of the upper part of the polypus is the only part covered by it.† This forms a serious complication to the treatment; and when they are covered entirely by uterine tissue they become sensible. When such a tumor is tied, the uterine tissue becomes enclosed in the ligature, inflammatory action is set up in the uterine tissue, and fatal consequences most frequently ensue.

The pedicle of these tumors is sometimes formed more or less of the uterine structure, with the addition of mucous membrane: in those which receive a distinct covering from it it is entirely so; whereas, when the tumor has separated the fibres, and insinuated itself between them, the upper portion of the pedicle, or that close to the uterus itself, is alone composed of this tissue. I have seen some large tumors projecting into the cavity, only covered by the mucous membrane, and apparently placed between it and the walls of the uterus, where there was no trace of uterine tissue. This fact was distinctly seen in Case III., and represented in drawing I. fig. 2 (*d*). After this polypus had come away I made a careful examination of it, and found that it was entirely covered by the mucous membrane of the womb, which was flocculent in parts, from

* Dr. Lee gives a case of muscular tissue of the uterus covering the polypus. *Med.-Chir. Trans.*, vol. xix. p. 121.

† See Langstaff's preparation in the Museum of the Royal College of Surgeons, England, (*Uterus* 32); also a fine preparation in St. Bartholomew's Museum, series 26.

the decomposition consequent on the ligature. Immediately beneath this membrane, especially at the upper part, was a very vascular layer (*c*), highly injected, which no doubt produced the excessive bleedings to which this patient was liable. On laying open the tumor, I found that it was composed of two small fibrous tumors of the uterus (*a* and *b*) enclosed in a cellular cyst, containing numerous small blood-vessels, and not at all covered with uterine tissue. The pedicle was composed of condensed cellular tissue, covered with mucous membrane, and not a particle of uterine tissue was to be found, nor was there a single blood-vessel seen within it; the mucous membrane around it appeared vascular. But although some polypi are entirely devoid of uterine tissue around their pedicle, a great many of these bodies possess that dangerous appendage; and therefore we see the value of Dr. Gooch's instructions, viz. to tie polypi as far as possible from the uterine surface, in order that the fibres of the womb may escape the ligature.

We have already stated that a polypus may have two pedicles, and also that one pedicle may support two polypi. Some have supposed that these pedicles are produced by the contraction of the neck of the womb; but this opinion is incorrect: the mere fact of there being two pedicles to one polypi is sufficient to disprove it; and a preparation in my possession shews a tolerably large polypus in the *cavity* of the uterus with a *distinct* neck.

But the os uteri and neck may cause constrictions on the bodies of the polypi as they pass through it, and thus complicate the diagnosis: for in these cases, on examination, you find a tumor with a neck, and immediately above it a hard, firm body, which may be mistaken for a partial inversion of the womb, although it is only the other portion of the body of the polypus. M. Lisfranc gives a case where this occurred: he says, "that it is not very rare to find one or more constrictions, in the form of a neck, in these tumors, which seem to be formed by the pressure which the neck of the womb has exerted on the tumor; and the depression will be in pro-

portion to the time it has been subjected to this circular pressure. This last fact is very important; for if it were not known, we might take for the uterus the portion of the polyp situated above the circular depression, especially if it were well defined." The neck of the uterus may sometimes so constrict the pedicle of the polypus, as to act as a ligature, and cause it to be thrown off. The author just quoted gives a case where this took place, and where he was enabled to watch the progress of decomposition going on in the tumor, which was at last expelled. Dr. Campbell also mentions some cases, where the os uteri, by firmly grasping the pedicle, has entirely suspended the circulation in the tumor, and thus caused its detachment.

The weight of the polypus may break the pedicle: this M. Lisfranc saw in four cases. Mme. Boivin also says, "that the pedicle of a polypus may sometimes inflame and break; at others, it is dragged and lengthened out until it breaks."

These tumors, like those of the uterus, may pass into the cartilaginous or bony state; and this accounts for the fact frequently recorded, that stones have been expelled from the uterus. Dr. Lee* gives numerous instances of this kind: in some cases there was only one stone discharged, while in others many; and in one quoted from Michel Mornus, "thirty-two stones were found in the uterus, the smallest of which was of the size of an almond."

How do these tumors become detached from the uterine walls?
—I would suggest the following explanation. We are aware that some fibrous tumors of the cavity of the uterus are possessed of a pedicle which is composed of uterine fibres: some of these have a layer of this tissue covering them. Others pass between the uterine fibres, and are placed between them and the mucous membrane of the cavity, become polypoid, but their neck only contains cellular tissue. When this has been the case, it is possible that by some great mental excitement, fright, &c., the uterine tissue, in the first instance, may be made

* In the *Cyclopædia of Practical Medicine*, Art. 'Tumors of the Uterus.'

suddenly and powerfully to contract upon itself, and detach the slight connexion between it and the tumor, by drawing up the tissue composing its pedicle into itself; whilst the cellular pedicle may become gradually absorbed, and the tumor detached by the action of the uterus.

I have been led to form this opinion from a preparation in St. Bartholomew's museum, (No. 13, series 26), where there is a "uterus exhibiting the growth of firm fleshy tumors from its internal surface: one of these tumors was attached to a very thin pedicle, which has given way by its own weight since its preparation, and hence it has fallen to the bottom of the bottle; the other tumor remaining is attached very slightly to the right side of the fundus (near the right fallopian tube), and appears as if it would undergo the same process." Here there is a case of a tumor, whose neck was so greatly reduced as to be unable to sustain its own weight when put up as a preparation; and if the patient had lived longer, the same process would most undoubtedly have taken place in the living subject. If fibrous tumors can be detached by the absorption of their neck, how much more frequently does it happen, that those which contain osseous deposit should be so thrown off. Here a hard substance is pressed upon by the action of the uterus; this favours absorption, so that the muscular pedicle is not only taken up, but the envelope is absorbed, and the tumor at last is expelled by the action of the uterus.

These tumors often contain cavities in their centre; some large, and lined by a smooth and polished membrane; others small, and presenting fibrous portions projecting into them, like the columnæ carnæ of the heart.* They may be empty and contain no fluid, or they may be filled with various productions. Mr. Langstaff† has related a case where a cavity of this description was filled with blood, and fat and hair have been found in them by M. Guiot. M. Boivin figures

* See Guy's Hospital Museum, preparation 2261⁴⁵, "where the polypus has just escaped from the neck of the uterus, of firm substance, but containing a considerable cavity, with portions projecting from its inner surface."

† See *Med.-Chir. Trans.*, vol. xvii. p. 63.

(Plate XIX. fig. 3, 4,*) a large polypus, with a cavity containing blood and other fluid matter, which issued from it by several orifices. Saviard† also makes mention of a tumor, as large as a bullock's heart, adhering to the fundus of the uterus of a woman who had died of exhaustion; it was hollow throughout, and the cavity filled with blood: he also gives two cases where the cavities were filled with gelatinous matter and hair.

After such a polypus has been removed by ligature, and the cavity ascertained, it has been mistaken for the uterus itself; but this ought not to remain long doubtful, as careful examination will point out the difference.

While speaking of these tumors containing cavities, it will be as well to mention an appearance that may be mistaken for them. We are well aware that the uterus in dysmenorrhœa throws off a membrane somewhat analogous to the decidua; most frequently, however, it is detached in small portions, and passes away with the menstrual discharge: but more rarely the uterus throws out this production from the whole of the lining membrane of the cavity. The menstrual fluid detaches a portion of the upper surface: this is increased at each return of the menstrual period, and at last it is turned inside out, and separated from the whole cavity, although not from the neck of the womb; its hollow portion becomes filled with menstrual discharge and blood, while it presents the form of a polypus. Chaussier‡ describes a tumor which protruded through the os uteri, and apparently consisted of a false membrane, which became distended by blood at each catamenial period, and then resembled a polypus. Breschet states, "that if the false membrane formed and shaped within the cavity of the uterus, be of considerable consistency, it may be detached and expelled entire from the cavity of the organ, though still adhering to its cervix, and propelled by blood at each catamenial period, so as to pass through the os uteri, and become elongated in

* Mad. Boivin and M. Dugés on *Diseases of Females*, translated by Dr. Hemming.

† Obs. 36. Mad. Boivin and M. Dugés. transl. p. 195.

‡ See Note of Dr. Hemming's in translation of Mad. Boivin and M. Dugés.

the vagina, and eventually form a tumor presenting the appearance of a polypus."

This appearance has also been observed by other authors, who have described it as the detachment of the lining membrane of the womb.

Thus, then, there are three morbid appearances resembling each other; viz. the true polypoid tumor, the tumor containing a cavity; the membrane secreted by the uterus, and becoming detached, assuming the character of the polypus; and inversion of the uterus. This latter, however, can be distinguished from the others by its extreme sensibility.

What is the source of Hæmorrhage in Polypoid Tumors?

—It is a well-known fact, that polypoid tumors, when projecting into the cavity of the uterus, (see Case III.), give rise to very frequent and alarming hæmorrhages. Cases have also occurred when, after labour, death has been caused by hæmorrhage from these growths.

We have already shewn, when speaking of the vascularity of fibrous tumors, that they contained vessels—although to a small amount—which were able to be injected, and which passed into the tumor from its enveloping cellular tissue, the tissue being much more vascular than the tumor itself.* Another source, and one quite as important, is the increased vascularity of the mucous membrane covering the tumor. Whenever the uterus is irritated, it causes a great increase of the quantity of the blood in its texture, the vessels actually become enlarged, the mucous membrane becomes congested, and assumes the same characters as at a menstrual period, and from this part a very great discharge of blood may take place. I believe that this character of the membrane is a particular cause of hæmorrhage in these cases: this opinion is supported by observation. If we attentively inquire into the first symptoms of polypi, we cannot fail to observe that the bleedings first

* These vessels, when in a morbidly active state, become greatly enlarged, and are a source of considerable bleeding: and *post-mortem* examinations have proved, that where there has been much hæmorrhage, this vascular layer has always been more distinct.

arise at the natural periods of menstruation; that it is the increase of the menstrual discharge that first drew the attention of the patient to her disease; but after a short time the irritation of the polypus produces almost a constant congestion of the part, which occasionally relieves itself by great and sudden hæmorrhages.

Dr. Oldham has very recently investigated this subject.* "The vascularity of these tumors," says he, "resides essentially in the investing a connecting portion of the proper tissue of the womb; and this undergoes changes proportioned to the bulk of the fibrous tumor. The arteries are enlarged, but very insignificantly as compared with the veins: the latter increase much in the same way as in pregnancy, gathering around the enclosed tubercle in a planiform manner, or densely collecting in the stalk. The amount of blood-vessels in the fibrous growth varies with the compactness and density of its structure; qualities which are produced in part by its infiltration of calcareous grains. When the growth is of long standing and very hard, the supply of blood-vessels, as shewn by injections, is very scanty; but in more recently developed tumors, large and numerous arteries are seen protruding from the uterine tissue into its substance, running in their intersecting lines, and dividing freely in the fibrous tissue. What has struck me as peculiar is, that the veins, although closely connected around the growth, do not appear to enter it. I injected a specimen a few months since, where the red fluid which had been thrown into the arteries had penetrated into the tumor freely, and the trunks subdivided into very minute capillaries, running parallel with the clear unstriped fibre of the growth; the veins, which had been filled with a yellow fluid, were not made apparent in the fibrous tumor, although they were well injected around it and throughout the uterus, and beautifully demonstrated the capillary rete, on the internal surface of the organ."

Thus, then, the principal source of hæmorrhage in tumors of a polypoid character, is not from their own vessels, but from

* See vol. II. of 2nd series of *Guy's Hospital Reports*.

their investing vascular membrane, and from the enlarged vessels, principally veins, of the mucous membrane itself; whereas in other polypi we shall find proper vessels connected with their structure. When these tumors are covered with a layer of muscular tissue, they acquire another source of hæmorrhage.*

The pedicle of these tumors occasionally contains large vessels. Levret has found an artery which had penetrated into the thickness of the tumor; Lisfranc has seen enlarged veins in the pedicle of the fibrous body; and there is a fine specimen (*Uterus* 42, Langstaff, 1528,) in the Museum of the Royal College of Surgeons, England, "where a fibrous tumor, nearly four inches in diameter, was removed by incision from the internal wall of the uterus. The cut surface of the pedicle by which it was attached, is one inch and a half in diameter, and exhibits the open orifices of several large blood-vessels. The patient recovered, although there was considerable hæmorrhage."

This fact, viz. the great bleeding from such cases, has been used as an argument against the operation of incising these tumors; but experience proves that vessels very rarely exist, and when present can be controlled by pressure. I believe there is only one case on record where the patient has died from hæmorrhage after the excision of a polypus.

These tumors do not bleed in proportion to their size; for those of the largest size may be almost without hæmorrhage, whilst small ones, and those very small, may give rise to almost fatal bleeding. Dr. Gooch† mentions a case where a polypus, as large as a filbert, was productive of alarming symptoms of hæmorrhage: he says; "that the hæmorrhage depended upon

* In St. Bartholomew's Museum, preparation No. 17, series 26, where "the uterus contains a large tumor, which has grown from the internal surface of the uterus, and has passed into the vagina. The pedicle is formed of uterine tissue, and apparently a slight layer of the same substance passes over the upper surface of the tumor. These parts, with the uterus, are beautifully injected, and a little injection has passed into the tumor." The uterine tissue is very vascular.

† See Dr. Gooch's *Account of some of the most important Diseases peculiar to Women*, 2nd edition.

the polypus, however small, was proved by the event; for it ceased on its removal." And Dr. Lever states, "that not unfrequently there is more loss of blood with a small tumor than with a large one: and this fact is an unanswerable negation to those who state that the blood comes from the tumor itself; for if that were the case, the larger the polypus the greater would be the amount of hæmorrhage."

Another occasional source of hæmorrhage from these bodies is, the accidental bursting of the varicose veins on their surface: these have bled so profusely, that they have required a ligature. Dr. Rigby had a case of this kind in St. Bartholomew's Hospital.

From these observations, we believe that the hæmorrhage arising in these cases may be attributed to the very vascular state of the mucous membrane at the insertion of the polypus with the uterus; that the veins of the part are the principal sources of bleeding; and when the mucous membrane is absorbed, the vascular net-work which envelopes these growths may add materially to the result. Even when the mucous membrane is uninjured, this envelope may materially increase its vascularity.

Polypoid Tumors may undergo all the effects of inflammation.—This happens very rarely, although it is occasionally seen. An abscess may be formed in their substance, and produce great discharge; ulcerations may arise in their surface, sloughing may occur, and even cancerous degeneration may commence. Dr. F. H. Ramsbottom relates a case where a large quantity of pus, to the amount of a pint and a half, was discharged daily from an abscess in the centre of a polypus, in an old lady who had uterine disease for years.* And both ulcerations and sloughing are observed in preparations of the Royal College of Surgeons, England, by Mr. Laurance and Mr. Langstaff.†

Symptoms of Polypoid Tumors.—These vary according to the

* See *Lond. Med. Gazette*, June 20, 1835.

† Laurance, 479, *Uterus* 22—Langstaff, 3381, *Uterus* 32; Royal College of Surgeons, England, Museum.

position which these morbid growths occupy in the uterus or vagina. When in the cavity of the uterus, patients may feel little or no inconvenience; if they be small, for many years: at length the menstrual period becomes irregular, and the discharge profuse; clots now and then appear, and during the intervals a copious white discharge is present. If the patient be advanced in life, the periodical discharge ceases for a time, then returns, and bleedings more profuse and more frequent appear, accompanied by uterine pains, and the patient's mind is calmed by the idea that these symptoms generally accompany the "turn of life." After a short time other symptoms arise of greater consequence. Instead of there being only deranged functions, contractions occur; at first slight and intermittent, afterwards full, continued, and expulsive. The tumor has become a foreign body, and the uterus endeavours to expel it. This frequently requires long-continued action, and the irritation produced in the system, before it has been expelled from the uterus, often proves fatal:* frequent hæmorrhages occur; there is great pain in the uterine region, it extends to the loins and thighs; a weight is felt in the perineum; there is a dragging pain in the lower part of the back, and walking in the erect posture is painful. Syncope comes on from irritation and loss of blood, frequent vomiting ensues, and death terminates the scene. The uterine neck may resist so forcibly the expulsion of the tumor, that it causes it to dilate the cavity of the organ, so that it can be felt above the pubis, and be mistaken for a uterine tumor. The sickness depends upon loss of blood and the violent action of the uterus.

The descent of the tumor into the vagina, however, may be gradual, or almost unnoticed; the bleedings now become more frequent, the health suffers, and the patient is more anxious for advice. At other times some extra exertion, vomiting, or a lively emotion, may cause a sudden descent, immediately followed by syncope or great alarm; the urethra may be suddenly pressed upon, retention of urine may occur

* See Dr. Lee's paper, *Med.-Chir. Trans.*, vol. xix. p. 123.

(Gooch), and inversion of the uterus may take place. After the tumor has reached the vagina, symptoms arise which are caused by the pressure it exerts, and the irritation it produces on the various organs with which it is in contact. The catheter may have to be frequently employed in consequence of continued retention of urine; constipation may be constant and troublesome; and the pressure of the foreign body in the mucous canal excites a profuse and foetid purulent discharge; under which circumstances it has been mistaken for malignant disease. Polypi, in this situation, have been known to have produced by their pressure, ulcerations to a fearful extent, even into the cavities of the neighbouring organs.

Hæmorrhage is among one of the most constant symptoms of polypi in all their forms. At the commencement of the disease, if the patient be young, the catamenia is increased in quantity, which is attributed by the patient's friends to an excess of the usual discharge; if advanced in life, it is considered as the warning of their final disappearance. But shortly the losses of blood are more frequent and profuse; sometimes clots pass from the vagina in a circular form, as if detached from a rounded body (Clarke); sometimes these clots are highly offensive, from their detention in the vagina, and give rise to the suspicion of malignant disease. These hæmorrhages occur suddenly and in abundance; they produce great effects upon the health, blanch the face, cause œdema in all the loose cellular tissue of the body, more especially about the ankles and eye-lids, and on their temporary cessation leave a profuse leucorrhœal discharge. The digestive functions ultimately become greatly disordered, frequent bleedings oblige the patient to seek advice; and when the ordinary astringents have failed to give relief, recourse is had to examination *per vaginam*.

This is the only means by which a polypus can be distinctly ascertained. At first, when situated within the womb, little or nothing can be felt; the uterus itself may be heavier than natural, and no other morbid symptom be distinguished:

the patient may be examined by many practitioners, or by the same many times, and still without any knowledge of the malady, until by some fortunate examination the tumor may be discovered (see Gooch). A remarkable peculiarity of the growth is, that they protrude from the os uteri, and can be easily detected at one time; whereas, at others, they entirely recede into the uterine cavity, and are unable to be discovered. This was observed by Dr. F. H. Ramsbottom;* and I have in one case seen the same thing occur.

When a polypus is found on the vagina, it is known by its being a smooth, hard, and generally an insensible tumor: this last character, however, does not apply to all cases; when the polypus is formed by a tumor of the uterus, it may possess great sensibility. This is greater when the pedicle is thick, and becomes very great when a muscular layer of the uterus covers the growth.†

The polypus is of a pyriform shape, the largest extremity being downwards; and this gradually becomes less towards the womb, to which it is attached by a pedicle, and is generally surrounded by the os uteri in the form of a cushion-like ring. Dr. Gooch, however, describes three different peculiarities in this respect, from which he would be able to distinguish the position of the tumor in the uterus. In the first, the os uteri entirely encircles the pedicle where the polypus proceeds from the fundus uteri: in the next, or in polypus of the neck, he says, "The finger cannot be passed quite round the stalk; it may be passed partly round it, but it is stopped when it comes to that part where it is attached to the neck. Again, in polypus of the edge of the orifice or lip, the stalk does not enter the orifice, but grows from the edge of it; it feels as if a portion of the lip was first prolonged into the stalk, and then enlarged into the body of the polypus."

In the polypi of ordinary size, the pedicle can be felt passing distinctly into the cavity of the uterus, surrounded by its neck;

* See Ramsbottom's Lectures, *Lancet*.

† See Dr. Lee's case, *Op. cit.*

but in large fungoid masses, which occupy the whole vagina, this fact is rarely ascertained, although the enlarged mass can be observed to decrease in size towards the womb.

No bleeding follows the examination of a polypoid growth when in its quiescent state; and this is one of the distinguishing marks between it and fungoid disease: but there are some cases where there is almost constant hæmorrhage; and in one I examined (Case III.), the blood poured from the womb on the patient assuming the erect posture, so as to forbid examination in that position. The tumor is found smooth and firm.

In some cases no hæmorrhage takes place, although a polypus may be present and distinct; but in its place a profuse "white" watery discharge is observed.* The polypi which are formed by an enlargement of the Nabothian glands, always produce a large quantity of white mucous discharge. I have also observed that no bleedings occur in some of the malignant polypi: I have seen in several cases of encephaloid there was no bleeding throughout the whole course of the disease; nevertheless, the profuse foetid discharge causes the same havoc in the system.

The Diagnosis of Polypoid Tumors.—1. Polypi may be, and are most generally, mistaken for *Inversio Uteri*. This may occur when the inversion is complete and recent, or when partial and chronic: when complete, the history assists us. It then generally takes place directly after labour, either from the effects of the uterine action itself, or from irregular and strong tension made on the chord of the placenta. You find it as a red fleshy tumor protruding from the genitals, very sensible to the touch, and frequently bleeding profusely; and last of all violent general symptoms are present, as syncope and vomiting. On examination, you find the hard round tumor of the uterus above the pubis—which is large after labour—absent, and the tumor in the vagina corresponds in size, &c. to the absent one. It has been stated, that a polypus can be distinguished from inversion of the womb by the presence of

* See Dr. Oldham, *Guy's Hospital Reports*, No. III. 1844, p. 106.

the os uteri around its pedicle : but this is not to be depended on ; for when inversion takes place, the fundus of the womb is gradually pushed downwards, and advances until stopped by the stronger fibres of its neck ; these resist its further descent, and form around the tumor “ a ruffle, like the os uteri.” Lisfranc has seen such cases occur.

But the case is a more difficult one when the inversion is chronic ; and it is “ sometimes perhaps impossible to distinguish a partial and chronic inversion of the uterus from polypus.” Here again we must refer to the history of the patient. If she has had a very rapid labour, followed by more than ordinary lochial discharge, or if great force has been used to take away the placenta ; and if, since her labour, she has been subject to menorrhagia, and that frequently, with dragging pain in the loins, we may say that it is inversion of the uterus.

In partial inversions you find all the symptoms of polypus : here the history of the case is very important—whether the tumor be sensible or not, although we must remember that some polypoid tumors are sensible. Dr. Lever states, “ that he has found as many uterine polypi which are sensible as insensible.” Examination by the rectum will be of great advantage : if we find by it, the uterus broader in its character, and if we are able to hook the finger above its broader portion into a depression, it is quite conclusive. Malgaigne ascertains the existence of partial inversion, by introducing a sound into the bladder greatly, though shortly, curved : he directs its concavity downwards, and he is enabled to pass the point of it into the concavity of the inverted uterus ; “ the index-finger of the left hand is to be introduced into the vagina, and you will feel the end of the sound through the parietes of the uterus.” This would satisfy any doubt ; but this means of diagnosis is not always applicable : and there is no little difficulty in introducing into the bladder of a female a sound with an acute curve ; and when in the bladder, there is great difficulty in forcing it down upon the uterus. The better mode of distinguishing between chronic inversion and polypus, is by the use of the uterine

sound: this instrument gives us information of the depth of the uterine cavity; for in inversion there is hardly any cavity, but in polypus the cavity need not be much encroached upon. Dr. Simpson, speaking on this subject, says: "As a general rule then it will, we believe, be found, that in cases of tumors projecting through the os uteri, and when the other symptoms leave any doubt as to whether the tumor be a true polypus, or merely the fundus of the organ chronically inverted, the employment of the uterine bougie will enable us to decide the diagnosis, and hence also the prognosis and treatment, by the positive or negative information it affords with regard to the shortening or non-shortening of the uterine cavity. For, first, if the bougie passes into the uterine cavity to its usual depth of $2\frac{1}{2}$ inches or more, the disease is not inversion of the fundus: a fact, the certainty of which may, while the bougie is still *in utero*, be further corroborated by the fundus *in situ* being actually felt through the hypogastric walls, while it is pushed forward on the apex of the instrument; while by the same means it is retroflected upon the front part of the bowels. In this case the tumor is one which is in general safely and easily removeable. But, secondly, if the uterine bougie cannot pass to any point around the stem of the tumor to a greater extent than about an inch, the uterine cavity may be considered as shortened by inversion, and the protruding mass cannot be interfered with without imminent danger to the patient." If the inverted uterus is pushed up, it causes great pain at first, but it *may be* replaced; but if a polypus occupy the cavity of the uterus, and be treated in the same way, no pain is caused, but it will be speedily rejected from the vagina.

Polypoid Tumors may be mistaken for Pregnancy.—When the polypoid tumor occupies the cavity of the womb, many symptoms arise which resemble pregnancy, and in many cases are mistaken for it. The breasts enlarge, but never present that œdematous appearance which they assume in pregnancy, although there may be follicles, and an enlarged and darkened areola; there is usually a weight in the pelvis, which is not

present in pregnancy; the bleedings are often profuse, at least, are present each month, while in pregnancy they are absent; there is no foetal heart sound or placental bruit, but there may be such rapid beatings of the aorta upon the tumor, that they may be mistaken for it, unless the pulse is carefully examined at the same time, when both beats will be found to be synchronous (as Case No. 1), and a fluid like milk may sometimes be squeezed from the nipples, although no pregnancy exists. However, great care is requisite in giving a diagnosis upon this subject: careful examination must be made, and the uterus will be found to present characters perfectly distinct from the pregnant womb. The elastic and doughy feel of pregnancy is absent, but the tumor is hardened, very frequently nodulated to the touch, much handling giving pain; the os uteri is found hard, and the neck of the womb of its usual length: sometimes, however, the os uteri may so resist the descent of the polypus, as to cause that body to enlarge the cavity, and then the neck of the womb may be absorbed into the general body of the uterus; but the tumor is always hard and resisting.

From these symptoms, viz. the continuance of the monthly discharge, even more frequently than the usual periods, from the distress of the patient, from the weight observed in the pelvis, and the character of the examination, we are enabled to draw a pretty correct conclusion.

A singular and interesting case occurred to me some time since, which shewed that partial abortion could be mistaken for a polypus. A gentleman, knowing that my attention was directed to female diseases, kindly took me to see a case of polypus, as it was then supposed, which he was going to tie. The woman had had severe hæmorrhage for some time, her face was blanched, and she appeared quite exhausted; on examination, a roundish insensible tumor was found hanging from within the os uteri: the nipples presented all the appearances of pregnancy. This gentleman ordered some medicine, and I went with him next morning to tie the tumor. When

we arrived we found that the tumor had been spontaneously expelled; and it proved to be the remains of a fœtus, in one portion of the membranes of which a coagulum of blood was formed, producing all the characters of a polypoid tumor as before described. The patient rapidly recovered without an operation.

A polypus is scarcely to be mistaken for *prolapsus of the uterus*. This affection can be known by the shortness of the "cul de sac" around the tumor, and the existence of the os uteri at its lower extremity: but when there is great swelling of the lips, and the parts long exposed, some difficulty may arise in drawing a correct diagnosis.

Many enlargements of the os uteri, of a scirrhus character, with the cauliflower excrescence of Sir C. M. Clarke, and malignant polypoid growths, may be mistaken for the common polypoid tumor; but examination must detect the difference, if the practitioner has the ordinary knowledge of the diseases of the womb. In scirrhus the pains are excessively lancinating, and worse at night; in cauliflower excrescence there is hardly any pain, but there is a profuse watery discharge. In both these cases bleeding is very trifling; in them it occurs after some exciting cause, as examination: in polypus it appears suddenly, and of itself. The discharge in the former is bloody, but they never have distinct bleedings. The ordinary enlargement of the os and cervix cannot be mistaken for this disease.

The Effects produced by Polypoid Tumors.—We have already referred to the effects produced by tumors on the cavity of the womb, when speaking of fibrous tumors particularly: there now remains for us to consider the effects produced by polypoid tumors. The first which deserves notice, is the partial or complete inversion of the womb. This accident does not appear to depend upon the weight of the tumor entirely, but more frequently to arise from the intrinsic force of the uterine tissue itself, the fibres of the womb acting very powerfully on the polypus, as a foreign body. Dr. Denman relates a case, where

the tumor was too small to have produced inversion by its weight, yet complete inversion occurred: the tumor was tied during life, but the patient died six weeks after the application of the ligature. On a *post-mortem* examination, the body of the uterus was found inverted, and the ligature had passed over the inverted part. "The polypus," says Denman, "could not have weighed more than an ounce, and had a very short, if it could be said to have any, stalk, so that the uterus could not, in this case, have been inverted mechanically, but by its own vehement action, excited to expel the polypus, which, like any other extraneous or offending body, was a perpetual source of irritation." John Hunter also preserved a preparation, which is now in the Museum of the Royal College of Surgeons, England, of an unimpregnated inverted uterus, with a polypus attached to the fundus, which was not sufficient, by its weight to have caused the displacement.

But when the tumor is large, and situated on the fundus, its weight may materially add to the other causes, and produce complete inversion of the womb. Mr. Walne gave an interesting case of this sort, where complete inversion of the uterus occurred from the presence of a large tumor from its fundus.* A beautiful preparation, illustrating the complete inversion of the uterus from a large polypus, is seen in the University College Museum, No. 117.

The uterus may not only be inverted when the polypoid growth is at its fundus, but it may be partially inverted when it is attached to other portions of its parietes, by the local contraction of the uterus; for instance, Dr. Oldham has recorded a case,† where the right horn of the uterus was inverted by a tumor in that situation.

The weight of the polypus may drag the womb downwards, and produce prolapsus of it. This is effected generally where the tumor is large, and has been ejected from the vagina.

Polypoid tumors, by their pressure, may produce extensive

* See *Medical Gazette*, July 4, 1845.

† *Guy's Hospital Reports*, Part III. April 1844, p. 109.

ulcerations in the neighbouring organs: they have been found by Lisfranc even to penetrate into the bladder; and a tumor attached to the womb has been expelled by rectum. When in the cavity of the uterus, inflammation is often set up, and adhesions form between it and the adjacent parts: many preparations prove this. Leveret and Mad. Boivin have observed these tumors to adhere to various points of the uterine surface, and even to the whole of it. The latter author says, "We have met with an instance, in which the tumor was thus attached to all points of the parietes of the uterus by cellular adhesions; which, though very lax, were sufficient to prevent it from passing the os externum." They also form frequent adhesions with the vagina, so as almost to disguise the disease. "It sometimes happens," says Dr. Blundell, "that the round polypus lying in the vagina contracts adhesions with the surrounding parts, so that you feel the lower frustum, an hemispheroidal rounded mass, but you cannot feel the pedicle. Now I examined a woman once in the hospital, and only once, and I did not clearly understand the case, which I have never met with before, nor have I since. On the very night I had made the examination, or soon afterwards, she died. The parts were brought to me afterwards, and I found them as I have described. I found too—which is the great practical point—that these adhesions could be very readily separated with the fingers; so that if I had known a few weeks before what was the nature of the disease, I could readily have detected the polypus, and applied the ligature; nor would the discovery of its nature have been difficult." Dr. F. H. Ramsbotham has also observed these adhesions between the polypus and the vagina.

When these tumors exist, the womb may not lose its functions; menstruation goes on regularly, conception may take place, and gestation may be completed. This happens in many cases, but in others these growths are distinct causes of barrenness. Lisfranc says, that where barrenness existed before, after the removal of the polypi impregnation took place. When the

polypus occupies the cavity of the womb, and is small, we see no reason why impregnation should not take place; but when large, and filling the cavity of the pelvis, conception is difficult.

Polypoid tumors may not be perceived before impregnation or they may be very small; but during its progress, more blood being supplied to the morbid growth, it increases rapidly, and sometimes attains a large size. After parturition the womb contracts, and the tumor often decreases to a considerable extent. The fact now stated is one reason given in order to avoid operating on the tumor until after parturition: but if the tumor be large during the early months, and likely to interfere with the expulsion of the child, the operation ought to be performed; and experience has proved that it is a safe one.

CASE (No. 3.)—*A Polypoid Fibrous Tumor.*

Peculiarities.—Menstruation profuse; great bleedings. Cure by ligature. Two small fibrous tumors, forming one polypus; no uterine tissue surrounding them. No vessels in the stalk; but there is a vascular layer covering the tumors.

Sarah Cooper, æt. 45, married; has never had children; was admitted into the Hospital for Women, Red Lion Square, Nov. 18, 1845. The catamenia were always regular, but profuse. Countenance blanched; and she has all the appearance of a person who had lost a large quantity of blood. Complains of a tumor in the vagina, which is accompanied with excessive bleedings, coming on suddenly, and producing great prostration; also of pain in the lower part of the stomach, and a weight in the pelvis, pain in the loins, and a bearing down pain in the fundament. In the intervals of the hæmorrhage she has always a mucopurulent discharge, but now the red discharge is constant.

History.—About three years ago, without any appreciable cause, had a severe flooding, coming on quite suddenly, and producing fainting; this ceased, and did not return for six months. At this time hæmorrhage reappeared, and remained seven days. During this interval the abdomen enlarged, the breasts became swollen and hard, and she supposed herself in the family-way. The bladder not affected; bowels constipated, and on going to stool she had the sensation of “something being lifted up into the abdomen.” The attacks of hæmorrhage have been more frequent lately, and for the last few days have been continuous.—Nov. 20, 1845. Complaints of great weakness, of an excessive bloody discharge—so much so, that it flows from her on assuming the erect position; and a tumor in the vagina. On making pressure on the abdomen above the pubis, pain is produced; but the fundus of the uterus is not felt.

Examination per vaginam.—The vagina is filled with coagula; at its upper part there is a firm and solid tumor projecting into it, having a smooth covering, not painful on pressure, and attached to the posterior portion of the body of the uterus by a very thick pedicle. This is entirely surrounded by a thin portion of the uterus, very dilated and dilatable, being the os uteri. The tumor is apparently as large as a closed fist.

On the 22nd, Dr. P. Smith applied a ligature to the pedicle; there was no pain on tightening it; and the red discharge entirely ceased after its application.—On the 29th, the ligature came away, after having been tightened daily; the hæmorrhage did not return, and she left the hospital cured.

*The appearances of the Tumor.**—It was as large as a small orange. Its external covering—the mucous membrane of the uterus—is flocculent, and partially decomposed. Below the mucous membrane, at the upper part, there is a distinct vascular layer, which gradually becomes less distinguishable lower down. On cutting it open,† the polypus appears to be made up of

* See drawing, Plate 1. fig. 2.

† See drawing, No. 2.

two distinct tumors, possessing all the characters of the fibrous tumors of the uterus, the anterior one embracing the posterior one; and between the two is a cellular layer, in which vessels may be seen. At the lower and posterior aspect the tumors separate from each other; but the mucous membrane passes from the one to the other, leaving a triangular space between the two. The posterior tumor is more vascular than the anterior, and is of a pinkish colour. The pedicle is distinctly and entirely formed of condensed cellular tissue, the tumor appearing, as in the drawing, perfectly distinct from it. Not a vestige of a blood-vessel passes through it; and there is not the slightest sign of its being composed of uterine tissue, and the tumor itself is quite free from such a covering. The pedicle is made up of condensed cellular tissue and a layer of mucous membrane. The microscopical appearances are those of condensed cellular or fibrous tissue.

I have again met with another polypus at the neck of the womb, which came away on the application of the ligature. It had a very thin pedicle, merely composed of cellular tissue and mucous membrane, and not as thick as a quill. On opening it, I found it was a distinctly round tubercle of the uterus, enclosed in mucous membrane. The envelope appeared slightly vascular; but not a vessel was observed in the tumor itself or its pedicle, although it had given rise to very great and depressing bleedings. Since the operation the bleeding has entirely ceased, and the patient has rapidly recovered her health and strength.

CHAPTER III.

SOFT POLYPI OF THE UTERUS.

WE have already considered those polypi which resemble in texture the tumors developed in the tissue of the womb, and have found them to be much more frequent than had been formerly admitted. But there is another class of tumors which will now occupy our attention, differing greatly in structure and appearance from those already described, and which we shall, for the sake of distinction, denominate Soft Polypi. Of these there are many varieties; some of which cannot be distinctly known until they have been removed from the body.

Their division comprises—1. Vesicular Polypi; 2. Polypi from the enlargement of the Nabothian glands; 3. Fibro-cellular Polypi; 4. Cellulo-vascular; 5. Mucous Polypi; 6. the Channelled Polypi of the Cervix.

The Vesicular Polypi are soft tumors attached by pedicles, covered with a fine membrane, and made up of a number of little round vesicles or cells, which contain a thin transparent fluid; the whole mass is supported by a thin fibrous tissue: they are of a dirty-white colour, and sometimes present a slightly yellow tinge. “The surface is smooth, and presents a rich embossed look, from the number of tense shining elevations.” They arise from the fundus of the uterus, and beneath the lining membranes of the womb. Sometimes they possess a pedicle, at others not. Dr. Lee says,* “Four specimens of this disease have come under my notice; and in all the tumor was situated under the lining membrane of the womb at the fundus, which was very thin and highly vascular. Two of these tumors were adherent to the uterus by a broad base:

* *Med.-Chir. Trans.*, vol. xix.

one resembled a dried fig—the other was larger than a hen's egg, and distended the cavity of the uterus, the parietes of which were healthy." Lisfranc says, "Naudin has seen a polypus of this kind, which had implanted itself at the fundus, and filled the whole cavity of the womb; and Lefauchaux has seen them existing with other species."

There is a preparation in Guy's Hospital Museum (2261¹⁰) of this disease, where the polypus, as large as a Windsor bean, is situated at the fundus of the uterus, close to the left fallopian tube: "throughout its substance it is thickly set with delicate simple cysts, about the size of hemp-seeds, and is placed under the mucous membrane."

It has been supposed that these polypi are produced by the diseased state of the uterine glands; and that the same action which produces polypi of the glands of Naboth in the cervix, is going on in the cavity producing them. This opinion is supported by Dr. Oldham; who, when speaking of these tumors, says, "It occurred to me that this somewhat curious fabric might arise from the uterine glands, which are well known to be expanded into cup-like cysts under the stimulus of impregnation and ovarian excitement; and I examined a preparation in order to determine the point . . . The subject of it was a poor woman, who died in the hospital from emphysema and bronchitis; she was fifty years old, and there was no history of uterine disorder. On opening the uterus a small polypus was seen growing from the anterior lip, which was made up of a number of cysts holding a transparent fluid, and covered with a distinct cuticular investment. Springing from the left side of the womb, and projecting into the cavity about two lines above the cervix, was another small polypoid growth; this consisted of a mass of round pearly-looking cells, blended together by a fine fibrous tissue, and distended to the utmost, so as to feel hard, by a semiopaque mucus. It struck me, that what had occurred at the lip of the womb to Naboth's glands to form them into polypi, had been transacted above in the uterine glands, transforming them into an

analogous production. And what gave confirmation to this view of the composition of the latter was, the existence of a number of small vesicles on the surface of the lining membrane of the cavity, in the immediate vicinity of the polypus. They appeared isolated and distinct, and held the situation which the opening of the glands would do, and looked as though the opening had been obstructed, and a transparent mucus had collected behind, filling and elevating them on the mucous membrane of the womb." This species of polypus may exist without producing any symptoms to indicate its presence, or it may give rise to all the symptoms common to polypi: an inveterate mucous discharge usually accompanies it.

2. *Polypi from the enlargement of the Nabothian Glands.*—In *post-mortem* examinations, I have frequently observed the glands about the lips and cervix uteri to be enlarged, producing transparent cystiform bodies, containing a clear limpid fluid. In one case they were studded around the opening of the os uteri, projecting more or less from its surface. This, then, is the commencement of these polypi, which are merely glandular enlargements, that may increase in size, become elongated, and sometimes acquire a very long pedicle. They may be very numerous, or only single. Mad. Boivin gives a case of a patient, who had an excrescence at the os uteri resembling white currants, "which," says she, "was no doubt depending upon the glands of Naboth for their existence." They vary in size from that of a pea to a hen's egg; and may either contain a simple fluid, or sebaceous matter, hairs, or a yellow-coloured viscid fluid. In the Museum of Guy's Hospital there is a preparation, with a cortical layer of fibrous tissue surrounding it, and an irregular lining membrane within it. In a preparation presented to Dr. Lee by Mr. T. Wood, there are several enlarged glands, hanging from the cervix by long slender and flattened stems, with a perfectly smooth surface: one of the glands, of the size of a walnut, was tense and smooth, and when cut open was found to contain a yellow curdy matter.

A case of this kind came under my observation lately:

the tumor was hanging from the posterior lip of the os uteri; it had a very firm but thin pedicle, four inches in length, terminating in a bulbous extremity, which hung from the vagina. The patient suffered no inconvenience from the polypus, but complained of symptoms arising from retroversion of the womb, under which disease she was suffering; the catamenia were regular; there never had been any bleedings, and the only symptom that gave annoyance was the mucous discharge from the vagina.* Where these polypi have long and slender stalks, there is great difficulty on examination in fixing them, in order to obtain an accurate knowledge of their insertion: being round and small, they slip away from the finger, and give great trouble in tying or excising them. This kind of polypus may be very thick and long; and a case of this sort is recorded by Dr. Gooch, where the polypus was in form like that of a flattened cylinder, about half as thick as the wrist, protruding half a foot from the vagina, and felt somewhat like an intestine. In this disease there are no bleedings, but there is a great discharge of a muco-purulent matter, produced by irritation in the vagina, but hardly sufficient to affect the health. And we may observe, that these polypi, and others attached to the vaginal portion of the womb, hardly ever give rise to large bleedings; whereas those attached within its orifice become troublesome from the hæmorrhage they produce.

3. *Fibro-cellular Polypi*.—These, next to the polypoid tumors, are most commonly met with in the uterus; they may grow to a large size, or may lie in the cavity of the womb, and adapt itself to its shape. The case of Mrs P. (No. 4) is a good illustration of this kind of polypus. On examining the tumor, which I did carefully after its extraction, I could distinctly pull out its texture, and perceive in its centre a large vessel passing down to the circumference, and ramifying in different directions. The polypus itself appeared to be made up of a fibro-cellular structure, apparently covered with the

* See case of Mr. Arnott's, *Medical Gazette*, June 11, 1836, p. 413.

mucous membrane: I could not inject it from the putrid state it had attained. This sort of polypus may grow from any part of the womb: that just referred to arose from the cervix; it is smooth to the finger, and, when encircled by a ligature, becomes tense and enlarged; it has a soft feel, is quite insensible, and bleeds freely on handling: for after every examination of the case above there was a pretty severe hæmorrhage, although the finger on withdrawal was not stained with blood. These bodies irritate the parts with which they are in contact, producing a muco-purulent discharge; there are frequent attacks of hæmorrhage—but Dr. Davis says they are seldom fatal or dangerous.

This form of polypus has been termed spongy, cellular, or fibro-cellular: “the latter term,” says Dr. Oldham, “very correctly expresses its appearance when bisected, but I believe erroneously interprets the true character of the growth. In some rare cases cysts containing blood have been noticed; but in general the void spaces or cells, as they are termed, are really truncated or divided veins, and the tumor may not inaptly be termed a venous tumor, the thin and delicate veins being surrounded by an unstriped fibre, closely resembling, if not identical with, the muscular tissue of the uterus. I have clearly made this out in dissecting some large growths of this kind, and by microscopic examinations of the fibrous structure. The veins not only collect on and around the growth, as in the other species; but while they may be seen on the surface, as large trunks, they penetrate the centre, and are distributed through it in large channels, freely communicating together, and forming a very extensive venous circulation.”

When first tied these tumors increase in bulk, look shining and of a venous hue; but they soon lose this tension, become soft, and when the ligature comes away they are shrunken to almost a third of their original size. They are said to arise from the submucous cellular tissue. They produce severe floodings, pains in the womb of a sharp lancinating character, with running down the thighs, constant uneasiness, and weight

in the pelvis; and during the intervals of bleeding, they give rise to a severe leucorrhœal discharge

4. *Cellulo-vascular Polypi*.—The more usual form in which these polypi are seen, is in the state of small red tumors lying between the os uteri, and very much resembling the excrescences of the orifice of the urethra. When present, they produce engorgements of the neck of the womb, more especially of the lips of the os uteri, which may become swollen and red, and treated as for an original disease. They give rise to symptoms of menorrhagia, are accompanied with pains in the back and loins, with a bearing-down sensation, which is very troublesome, &c.; and in the interval of the bleedings produce a mucous discharge. Hæmorrhages may occur once a fortnight, or only at the monthly periods. In a case I have lately seen, the patient had irregularity and great increase of the menstrual discharge, which had reduced her considerably, and a profuse flow of “whites” during the intervals. On examination with the speculum, a small tumor was observed, of the size of a pea, on the posterior lip of the uterus, which possessed a very thin and slender pedicle, but so short, that the tumor itself appeared sessile. The caustic was freely applied, which very shortly destroyed the tumor, the discharge ceased, and she quickly recovered.

These tumors, individually, may be quickly cured; but there are frequently more than one at the same time within the cervix, and may either be treated by torsion or caustic.

But a much more serious complication is when they assume the appearance of fungous growths, and are observed as red vascular granulations around the os uteri. M. Lisfranc states “that they may become so large as to fill the cavity of the uterus and vagina, and even pass beyond the inferior orifice of the canal. If shreds be detached, they do not appear to diminish the volume, and extirpation is usually followed by relapse. They are not pedunculated, that is to say, when they offer a pedicle, it is badly described.” Some of these polypi bleed profusely, and become much tumified at the time

of menstruation; they resemble erectile tumors, and M. Lisfranc compares their appearance to a "foetal placenta two months old." At various periods they frequently become much enlarged and again decrease. "A case," says Dr. Hemming, "of erectile polypus is given in *Bib. Medicale*, Vol. xxxix. p. 255. It was observed that the volume of the tumor was very variable when it was gorged with blood; it descended beyond the orifice of the vulva, and was seen externally. But the loss of blood which the patient experienced each time caused it to return, and then it could only be perceived by the finger. It was in this state that it was extirpated without any hæmorrhage."

5. *Mucous Polypi*.—These appear to be merely the elongations of the mucous structure itself: they very frequently exist in the cavity and neck of the womb. I have seen them in various parts of the uterus, more especially on its neck. They generally lie dormant, and give rise to no particular symptoms. There are many preparations in the Museum of the Royal College of Surgeons, England, shewing this kind of polypus.

6. *The Channeled Polypus of the Cervix*.—This is a rare form of polypus, and can only be ascertained after death, or its extraction. It was first described by Dr. Oldham,* who says, "In my investigations of polypi, I have met with two specimens of very different polypi to those described by Dr. Lee; like them, they are from the cervix, and the crypts with their tenacious mucus reappear within them. I would designate the channeled polypus of the cervix from the fact, that its interior is made up of several large channels, with occasional communications between them, and opening by large orifices on the free surface of the growth. These polypi do not at all resemble those described by Dr. Lee; they do not appear as a number of pendent enlarged cysts, clustering together, but rather as a solid single polypus, with numerous orifices marked out on their exterior." To describe the symp-

* *Guy's Hospital Reports*.

toms and progress of this tumor, Dr. Oldham gives a case, which for the same purpose we will transcribe.

“Mrs. —, æt. 33, looking blanched and thin, has been married a year and a half. A few weeks after marriage, while engaged in some ordinary domestic work, she was suddenly attacked with hæmorrhage from the uterus, which came on in gushes, and lasted several days: after this she miscarried about the sixth week of pregnancy. Since this period she has had repeated attacks of hæmorrhage, and has miscarried a second time at the same week of gestation. The hæmorrhages have blanched and reduced her. A polypus, growing on a long slender stalk from within the os, projects beyond the vulva, about the size of a large spread-out fig: it was insensible to the touch, and as soft and impressible as ordinary flesh. On dissecting this when cut off, I found that its pedicle, on the divided surface, had several small orifices, most of which were vascular trunks; and the outer surface of the stalk had some concentric rings rather elevated above the surface, and was full of small openings, from some of which blood flowed when the tumor was pressed. The large valvular orifices were found to lead into the interior of the polyp, dilating into channels, which were lined by a thin rugous membrane inflected from that, covering the polypus. Other channels led out, here and there, from a larger one; and so the growth was traversed throughout by these channels, which were all more or less full of mucus. The trunks became smaller as they approached the pedicle, but could be traced through it. In some portions some cœcal tubes, dilated and bulbous, and quite full of mucus, were visible.”

I had the opportunity of examining one of the preparations of Dr. Oldham, and find it as has been described. The channels were large in the substance of the tumor, and its surface displayed a number of openings. This preparation was more globular than the one described, and was not attached to the uterus by so long a pedicle, although the internal structure was the same.

Dr. Lee has seen two cases, where he found a tumor in the fundus and body of the uterus, which grew from the mucous membrane, or was formed by a morbid change of the mucous membrane itself: he says that "this tumor does not acquire a large size, and seems to be analogous to the common polypus tumor which is found in the cavity of the nose. It has a broad base and flattened form, and in some cases is largely supplied with blood-vessels. I have only seen two specimens of this disease."

Dr. John Ramsbotham also describes a similar disease, although not possessing a pedicle, a tubercular state of the internal surface of the uterus. "This disease," says he, "is not so readily detected by the finger as the polyp; for, being within the cavity, and not protruding externally, it easily eludes observation. Yet if the os uteri be somewhat open, so as readily to admit the finger, a number of small tuberculous eminences may be discovered within the cavity: these eminences do not possess a narrow neck and a base, like the polypus; they are as broad at their base as at any other part of their composition. They appear to be rather local extensions of the uterine substance into its cavity, than positive derangements of structure; at least they do not take on that rapid increase in size which is observable in the polypus, but, like the polypus, they are covered by the mucous internal membrane, the extension of which produces various disturbances in the uterine function."

Symptoms of Soft Polypi.—These are for the most part the same as those which have been fully described in the former Chapter; but we may remark, that in these cases the white mucous discharges are greater, while the expulsive pains are less, than in polypoid tumors: hæmorrhages are very frequent in these polypi, and is the principal symptom to which we ought to direct our attention. Its source is not only from the planiform arrangement of the veins of the mucous membrane at the base of the tumor, as we find to be the case in the former disease, but also from their own proper vessels, principally

veins. Dr. Ashwell has succeeded in injecting a polypus of a fibro-cellular growth. Dr. Oldham has traced the channels intersecting the body of the polypus, into the veins of the uterus, and considers them identical: and we all know, that however much these tumors may bleed previously to a ligature being applied, the hæmorrhage usually ceases on its application. This fact, however, is accounted for in two ways: the first, by the ligature of the vessels themselves; and secondly, by the strangulation of the tumor, and the death of the part, causing a cessation of the irritation of the mucous membrane which had previously existed. Both these modes of action are called into play on the ligature of the soft polypi.

The erectile tumors bleed upon the same principle as other erectile structures of the body, viz. from the bursting of their vessels; and many of the soft polypi bleed from the bursting of veins on the surface. When large, they produce the same symptoms of irritation in the neighbouring organs as we have described; and they may even occasion inversion of the womb, either by their weight or the irritation they produce causing the uterine tissue to act upon itself.*

These polypi may be present and produce no definite symptoms; and the disease is only ascertained by examination. This fact occurred in a case now under treatment; when on examination we found a small cellulo-vascular polypus upon the edge of the posterior lip of the os uteri. But they usually affect the general health, producing loss of appetite, dyspepsia, uneasiness in the uterine region, with a dragging sensation in the groins, also an almost constant sense of prolapsus of the womb: a mucous discharge first appears, followed by frequent and profuse bleedings.

Of the Treatment of Polypi.—The treatment of the soft variety of polypi consists entirely in their removal, medicine being useless: whereas, in tumors of the uterus projecting into

* See Mr. Walne's case of complete inversion of the womb from a polypoid tumor. *Med. Gaz.*, July 4, 1835, p. 482.—Also Dr. Oldham's case of the womb being inverted by its own intrinsic force. *Guy's Hospital Reports*, Part III. April 1844, p. 109.

the cavity, medicine can relieve some of the symptoms present, although, when they have become truly polypoid, it fails to produce any good effect.

When the tumor projects into the uterine cavity, it usually gives rise to frequent and violent hæmorrhages; these are repeated, and soon affect the general health. It is to this symptom that we must direct our treatment; and in doing so we must endeavour, as far as possible, to prevent or allay any excitement that may be present, to reduce the local engorgement by the frequent application of leeches during the intervals of menstruation, and attempt the reduction of the tumor by the application of iodine and mercury. It has been suggested, if the above remedies fail, to cauterize the tumor when it protrudes into the os uteri, in order to destroy the vascular membrane which envelopes it, and on which the bleedings depend.

M. Lisfranc has recommended this mode of treatment, and gives very favourable evidence of its practical results. He was led to try this remedy, on the supposition that the bleeding arose from the portion of the tumor which is unprotected, by pressure; "for," says he, "the parietes of the tumor, except at this point, viz. the os uteri, are closely and continually pressed by the walls of the uterus, whereas this portion is free." He therefore applied the proto-nitrate of mercury to this portion of the tumor within the os uteri, and found it succeed admirably in stopping hæmorrhages in this disease: and he has given many cases illustrating the beneficial results of this treatment. This author has also proposed to enucleate these tumors when projecting far into the cavity of the uterus, or when they occupy the neck of the womb. We have shewn that they are very slightly connected to the surrounding tissue of the uterus; that they are separated from it by a distinct capsule of cellular tissue—that this is loose and easily torn; and that they can be turned out of their bed with little or no force: which facts are favourable to the operation. That proposed by M. Lisfranc is this: to cut the outer envelope,

which is the mucous membrane, and in most cases also a layer of uterine tissue, and then with the fingers, or instruments adapted for the purpose, to break up the tumor and detach it from its connexions. When the tumor is in the cavity of the uterus, and the os uteri undilated, great assistance may be derived by the introduction of the sponge tent, which, by its power of dilation when wet, will enlarge the mouth of the womb almost to any amount; so that I have known in one case, that the fingers of the operator could be freely introduced in the cavity of the womb, and I have with the greatest ease passed my finger into the cavity after its application.

When the tumor is polypoid, or is a soft polypus, several means have been employed to detach it from the surface of the womb.

1. *By the excision of Polypi.*—Before we decide on the removal of a polypus, we must well ascertain its attachment to the uterus, and whether it is in a fit state to be taken away. Supposing it to be placed within the cavity of the uterus, and the os uteri closed, it would be folly to attempt its removal: we must suppress the bleedings by plugging the vagina, rest, an elevated position of the pelvis, and local cold, with some refrigerent drink. If the polypus has made some way through the os, and that is in a dilatable state, the Ergot of Rye has been very beneficial in protruding the polypus into the vagina from the embrace of the neck of the womb. Emetics have been employed for the same purpose; also natural vomiting, or straining at stool, has had the desired effect. But generally these remedies are not advisable; for, by waiting a short time, the bleedings which accompany the disease will produce a relaxation of the uterine tissue, and then the polypus will be passed into the vagina.

When this is the case no medical treatment will be of any avail—the tumor must be taken away; and the means by which this is to be accomplished are now to be considered. 1. *Excision.*—This treatment is applicable to all kinds of tumors.

The great objection to it has been, the fear of hæmorrhage after the operation: and there appeared a case in 1634, which favoured this opinion, and is the only case on record, where a woman has lost her life by hæmorrhage after excision. Its facts were published by Zacutus Lusitanus in the early part of the seventeenth century; and we there find that no means were employed to stop the hæmorrhage, and the woman was allowed to bleed to death. Now, as this is the only case on record where such an event has occurred, and as it was treated in the manner mentioned, we shall not allow its recital to weigh much in our opinions against this operation.* Dupuytren is in favour of this operation; and he proves the fallacy of the dread of hæmorrhage by stating the fact, that of two hundred polypi which he had taken away in this manner, only two instances occurred where hæmorrhage took place, and in them the bleeding was instantly stopped by proper applications. Lisfranc says, "I have made excision in one hundred and sixty-five polypi, and have only met with hæmorrhage twice. In the first patient there was scarcely any blood after the operation, but three hours afterwards an excessive hæmorrhage took place: one of my assistants overcame it by plugging the vagina. Upon the second patient the bleeding did not commence until five hours after the operation, and was stopped in the same manner. In both the cases the mucous lining membrane of the polypus was very vascular." The arguments used in favour of this operation, in preference to the ligature, are numerous; and the objection raised to it is, I hope, successfully combated. At least the experience of many practitioners prove, that the removal of the tumor by the knife is not only judicious but safe. In the first place, by excision you get rid of the disease at once, and in a few days you restore your patient to health: in the next, you dispense with a large and putrid mass, decomposing in the vagina; the fluid portions of which, if absorbed, would produce perhaps fatal results.

* Since this dissertation has been in the press, Dr. Montgomery, of Dublin, has mentioned an unsuccessful case after excision, from violent hæmorrhage.

The best period for operating on polypi, is soon after the menstrual discharge has disappeared, or after a severe hæmorrhage; for at that time the genitals are more lax, and the flow of blood in them diminished.

Excision is not equally applicable to all tumors: when the pedicle is large and thick, or where large vessels are found pulsating in the stem, it would not be advisable to employ this operation. In these two cases Siebold says that he should prefer the ligature. But the tumors best adapted for the treatment by excision, says Dr. Davis, "as a single measure, are those with narrow stems, consisting of firm fibrous or ligamentous tissue, together with small excrescences, not easily removed by torsion, nor sufficiently distinctly pedunculated."

The operation is one of little difficulty. The tumor is seized by a large vulsellum, or a ligature is passed through it, in order to bring it down beyond the vulva: if it be large, and the external opening small, a pair of midwifery forceps have been recommended to effect this object. You will then be able to feel the pedicle and its attachment to the uterus; and if there be no pulsation, and the pedicle not very thick, you pass a pair of curved knife-bladed scissors and divide it: the patient ought to be watched for some time, for fear of hæmorrhage. In the majority of cases the uterus is entirely free from disease; but when the organ is enlarged by tumors, &c. it places a great obstacle to the descent of the uterus, and almost forbids the operation. I have seen one case, where the uterus could not be brought down to the proper position for the excision of the morbid growth, on account of a tumor attached to its walls. I should always recommend plugging the vagina after excision of a polypus, as it does not produce any inconvenience, and is a matter of precaution: the only thing to fear is retention of urine, from the plug pressing on the urethra: this can be easily remedied.

But many patients will not allow themselves to be cured by cutting instruments, who are glad to avail themselves of other treatment; and this may be accomplished by the—

2. *Ligature*.—This can be applied without pain, and only a little disagreeable manipulation. Dr. Gooch says he applied a ligature without the patient being conscious of the operation, she supposing that the necessary examinations were only being made. In England, at the present time, the ligature is the remedy in most general use, and from its ease in application it is likely to continue a favourite. Mr. Arnott, however, has published a clinical lecture, with cases in favor of excision;* and if we could get our patients to overcome the dread of cutting instruments, it would be the best operation in the hands of a judicious surgeon. The ligature, however, is an excellent remedy. Levret was the first author who brought under the consideration of the profession the uses and advantages of the ligature applied to polypi; and he quoted the case of Zacutus as a convincing fact, that it was superior to the use of cutting instruments. He invented several instruments to accomplish his object, and published a report of them in 1749; but it was not until 1757 that he gave an account of his celebrated double canula, which has formed the basis of all instruments for this operation since invented. In this instrument the canulæ are fixed to each other, and it requires some dexterity to carry the loop of the ligature around the tumor. M. Herbiniaux, perceiving this defect, brought forward his instrument, consisting of *two distinct* canulæ, in 1770; “the one,” says he, “used as a principal, for carrying the loop of the ligature to the stem of the tumor, and the other as an auxiliary, for conveying it around the pedicle, and completing the noose within which it is to be included.” Desault’s instrument, which resembled the former, superseded Levret’s; and Dr. Gooch’s modification of Niessen’s instrument† appears to be the simplest and most efficacious of those brought before the public, we will give his description of it, as well as the mode of its application. He says, “the instrument which I use for this purpose, and which in numerous cases has assisted

* *Med. Gaz.*, vol. viii. p. 441.

† Namely, making the tubes straight.

me through the operation, consists of two silver tubes, each eight inches long, perfectly straight, separate from one another, and open at both ends. A long ligature, consisting of strong whipcord, is to be passed up the one tube and down the other, and the two ends of the ligature hang out of the lower ends: the tubes are now to be placed side by side, and, guided by the finger, are to be passed up the vagina along the polypus, till their upper ends reach that part of the stalk around which the ligature is to be applied: and now the tubes are to be separated; and while one is fixed, the other is to be passed quite round the polypus, until it arrives again at its fellow tube and touches it. It is obvious that a loop of the ligature will thus encircle the stalk. The two tubes are now to be joined, so as to make them form one instrument: for this purpose two rings, joined by their edges, and just large enough to slip over the tubes, are to be passed up until they meet the upper ends of the tubes, which they bind together immoveably; two similar rings, connected with the upper by a long rod, are slipped over the lower ends of the tubes, so as to bind them in like manner: thus the tubes, which at the beginning of the operation were separate, are now fixed together as one instrument. By drawing the ends of the ligatures out of the lower external ends of the tubes, and then twisting and tying them on a part of the instrument which projects from the lower rings, the loop around the stalk is thereby tightened, and, like a silk thread round a wart, causes it to die and fall off." This instrument, fitted with a windlass, is used by Dr. Ashwell at Guy's Hospital.

The obvious objections to all the instruments alluded to, is the space they occupy in the vagina, from their bulk, and from their liability to transfix the womb, if the patient is not very careful. In order to lessen the bulk of the instrument, Quackenbush, an American surgeon, has modified Gooch's: instead of canulæ, he has two long silver stems, with an eye at the extremity of each, through which he passes a piece of whipcord: these answer the same purpose as the canulæ of

Gooch, in passing the ligature around the neck of the tumor. There is also another silver probe, at the upper extremity of which is appended a ring, large enough to receive the other stems and ligatures; the ring is pushed up to the neck of the tumor, the stems are withdrawn, leaving the ligatures within the ring, the ends of which are to be attached to the lower extremity of the probe: that and the ligatures are the only portions remaining in the vagina. In applying a ligature, the very smallness of this instrument is its great disadvantage; there is nothing for the hand to grasp, and the instrument slips so much about, that it adds greatly to the ordinary difficulty of the operation. But although in this way you get rid of the bulk of the instrument, there still remains a portion which may transfix the uterus. And another contrivance has been invented by M. Lonsdale, of the Middlesex Hospital, to obviate this difficulty: the principle of his instrument is to tie a ligature around the tumor, to retain it there by a small mechanical catch, and to take away all the other parts of the instrument from the vagina. I would refer you to the published account of this instrument, as it is too long to find a place here: I can only say that I have had an opportunity of examining it and seeing its application, and can strongly recommend it: its simplicity becomes apparent when you see its demonstration, while all portions of the apparatus, except a small part, are taken away from the vagina. The only objection I can see to its use is, that the ligature cannot be tightened after its first application.

Mr. Beaumont has also invented an instrument to tie the knot of a ligature round the stem of a polypus, taking away everything. It is very ingenious, but rather too complicated, and subjected to a similar objection.

During the application of the ligature the patient should be placed on her left side, with her knees drawn well up, and the buttocks protruding: then, by introducing the instrument to the polypus anteriorly, you are enabled to have it fixed there after the operation, which prevents the probability that

the movements of the patient will cause the instrument to produce injury.

The time which is required by a ligature before it produces sloughing of the tumor, is various. In several cases I have seen, the time varied from four to twenty days. In the fibrous polypus (Case No. 3.) the ligature took seven days to produce its detachment. Dr. Churchill mentions the time as from six days to three weeks. Dr. Gooch thinks the time depends upon the thickness of the stalk, and the frequency with which the ligature is tightened: it most commonly requires (says he) four or five days, but sometimes only two, and sometimes as long as ten. Dr. F. H. Ramsbotham says he has known the ligature cut its way through "in less than thirty hours, or it is sometimes six or eight days." Usually, however, the polypus is entirely detached at the end of the fourth or fifth day.

In the removal of the polypi there are several practical points suggested by the preceding remarks. We have noticed that polypi may be attached to the uterus by more than one stalk: and this circumstance would produce a degree of embarrassment to the practitioner unacquainted with the fact. That more than one, sometimes five or six polypi, may occupy the cavity or neck of the uterus at the same time, so that sometimes after one polypus has been removed another may make its appearance. Now it is an established fact, that the pedicle of a polypus, after it has been cut through, has no tendency to grow again, but generally disappears, either by being taken up into the tissue of the womb, or by its decomposition, and discharge with the fluids of the vagina: so that when a second polypus appears after the removal of a previous one, it may be attributed to a second having been in the uterus, and not to the production of a second from the old stalk. I have lately had the opportunity of examining a uterus, from the cavity of which a large polypus had been removed about a year previously. I assisted at the operation, and knew the particulars of the case. This patient died of malignant disease of the ovary; and on opening the uterus we found the cavity

rather enlarged, but healthy; and on the posterior wall, just above its neck, we perceived a distinct space of the size of a sixpenny-piece, slightly corrugated, with here and there a small protuberance, and apparently covered with mucous membrane. There were no remains of the pedicle, except this cicatrix-like appearance.

Again, polypi ought to be tied as far from the uterine substance as possible. This precaution was urged by Dr. Gooch, who found by experience that fatal symptoms often occurred when the ligature was applied close to the womb; for in that case part of its tissue was in danger of being included in it, giving rise to dangerous symptoms. This appears to be a very frequent mistake, and one *usually* fatal. We must then watch well the symptoms which follow the strangulation of the neck of a polypus; and if there is great or severe pain, vomiting, general disturbance, &c., we must immediately loosen the ligature and relieve these symptoms: it may be tightened cautiously again, but if the same effects are produced it must again be loosened. Dr. Davis has mentioned several cases where the tissue of the womb has been included in the ligature, given by French authors. In these cases the points above were not attended to, and the patients died. He then contrasts such practice with Dr. Denman's, who in one case was obliged to loosen the ligature five different times; after which he succeeded in curing his patient.

After the ligature has been applied, and before the morbid growth has separated, the tumor itself generally swells from the stagnation of blood in its substance, and frequently we are obliged to have recourse to the use of the catheter, from its pressure on the urethra, producing retention of urine. The bowels ought to give us no trouble, as they should have been opened, and the bladder emptied before the operation. When decomposition takes place in the tumor, there is an excessive and foetid discharge, and the constant use of tepid injections of infusion of anthemis, or warm water and a little chloride

of lime, ought to be insisted on: cleanliness in these cases is an essential point, and cannot be too frequently urged.

Usually the tumor, after decomposition, shrinks to a third of its original size, and we are surprised to find so small a piece attached to the ligature: at other times, when a firm hard tumor is under treatment, it retains its bulk, and is lodged in the vagina, the orifice being too small to allow of its expulsion. Midwifery forceps have been called into requisition for its extraction; but a small vulsellum or dressing forceps will answer every purpose. After the polypus has been removed the vagina may become completely closed from the adhesion of its two surfaces,* and therefore examination ought to be made after the operation.

The best time for operating on these tumors we have already stated to be after the menstrual discharge or a severe hæmorrhage, for then the parts are more relaxed; but when the disease is complicated with pregnancy, it may require consideration. Some practitioners think that no operation should take place while gestation is going on, for the tumor receiving an increased flow of blood, grows much more rapidly, and attains a larger size than in any other state; and it has been observed that the polypi decrease in size, and almost approach their original condition after parturition: besides these considerations, the irritation of a ligature might produce abortion.

Dr. Ramsbotham left a tumor on the lip of the os uteri of an impregnated uterus, and the woman was delivered without difficulty; after parturition the tumor diminished, was operated on, and she recovered without a bad symptom. This practice may be followed at the later months of pregnancy, if the tumor be not so large as to interfere with the process of the expulsion of the child: but if one is called to the patient in the early month of pregnancy, or if the tumor gives rise to great hæmorrhagic discharges, or attains a large size, then one would be justified in

* See a case of occlusion of the vagina after the removal of a polypus by ligature. *Dublin Journal of Medical Science*, Sept. 1, 1839, p. 101.

operating at once, and the practice will be successful, although it may be surrounded by apparent difficulties.* When these tumors are left, the pressure of the head of the child may be sufficient to detach the tumor, and the action of the uterus itself has been known to have produced the same effect.

Torsion has been recommended as a means of removing polypi: this remedial means can only apply to the small tumors of the cellular and mucous kind. The operation consists of twisting with the finger and thumb, or by the aid of forceps, the small growth, until it is separated from its attachments. From the nature of the operation it will be seen that only small growths, or those with a slender neck, are applicable for this treatment.

I have seen some small polypi removed by caustic: this treatment is generally a tedious one, and where they are large enough to be taken hold of, they should be excised.

CASE (No. 4.)—*Vesicular Polypus of the Uterus.*

Peculiarities.—Tumor firmly embraced by the neck of the uterus: this became dilated after a severe bleeding, and allowed the pedicle to be felt. Profuse hæmorrhage at short intervals. Ligature. It came away in twelve days. After the operation hæmorrhage ceased. Death from peritonitis, caused by an injury during convalescence. No *post-mortem* examination allowed.

Mrs. P., ætat. 41, has generally enjoyed good health, is married, and has had three children, the last eight months since, which she says was complicated with a false conception, requiring force to remove the child: has also had four miscarriages. She has never suffered from hæmorrhage, until within the last twelve months: since that time has been subject

* See case of polypus tumor removed during gestation, and the child full born. Dr. Merriman's *Synopsis*, Appendix, No. XII., p. 234.

to floodings, which have produced distinct fainting fits, and after their disappearance she became affected with intense pain in the hypogastrium and back, from which she has been scarcely relieved. On examination she was found to have a small polypus uteri, and became a patient of Dr. Reid's, Physician to the Northern Dispensary, &c. I saw her, for Dr. Reid, a few months back, when she was suffering from a severe flooding, with sharp stabbing pains in the region of the womb, which succumbed to treatment. These attacks came regularly once a month, but latterly there was only a fortnight's interval; the red discharge varied in quantity, and was followed by a very profuse leucorrhœal one. She now became much worse, and in August 1844, an examination was made prior to the application of ligature.

Examination per vaginam.—The lower portion of the tumor could be felt distinctly, the other being closely grasped by the os uteri. It was thought not advisable to operate immediately, because the polypus was not entirely ejected from the womb: the neck of the womb also was extremely sensitive, and had strongly grasped the body of the polypus. After an examination there was a discharge of blood.

A short time after this report, the beginning of August, she was seized with a violent flooding, and accompanied by strong expulsive pains, which she described as those similar to miscarriage, with a sensation of burning in the left groin. The bleeding was checked by the administration of acids and cold, and the pains were relieved by opium. When the discharge had ceased, the polypus was found much lower in the pelvis, and the os uteri dilatable around it, so that the finger could be passed up between it and the tumor, which did not appear to narrow much to a pedicle.—Aug. 23, 1844. Dr. Reid applied a ligature, which produced no pain on being tightened, and came away on Sept. 4th, bringing with it only a small portion of the tumor: from the restless character of the patient, the ligature had slightly slipped; but, however, all hæmorrhage had stopped, and she refused to have another applied.—Sept. 26.

She again requested Dr. Reid's advice. At this time the bleedings, which had *entirely* ceased after the last application of the ligature, began to appear more profusely than before, and it was determined again to tie the tumor.—Sept. 28. *Examination per vaginam*. The tumor was much larger than at last examination; it was of the size of a small orange. The os uteri was enlarged, so that the finger freely entered it: the insertion of the pedicle could not be felt; there was no pain on handling it, but pulling it from its attachment gave pain. Dr. Reid again used the ligature: there was no pain on its application, but some short time afterwards pain was complained of above the pubis. After the operation the tumor became tense.—Oct. 10. The ligature came away, bearing in its embrace the tumor, which was reduced to the size of a walnut; its structure was cellulo-fibrous; it was however so decomposed, as to be unable to be minutely examined, but by pulling out the tissue, numerous cells were observed, surrounded by fibrous tissue.—Oct. 12. Doing very well, the discharge nearly disappeared, no pain. Oct. 14. Not so well. She states, after having some words with her nurse, she got out of bed, and tried to push her out of the room, when a scuffle ensued, and she was thrown violently on to her bed: very soon afterwards she perceived a severe pain in the left side, was sick, and felt extremely ill; which symptoms have continued to increase; peritonitis came on, and she died three days after the injury.

It was ascertained she had been taking spirits to some amount before the quarrel ensued. No *post-mortem* examination was allowed.

CHAPTER IV.

CAULIFLOWER EXCRESCENCE OF THE OS UTERI.

THE character of this disease is not generally understood in the profession. Some describe it as a cancerous affection or polypoid cephaloma (Hooper), others as “fungous hæmatoides,” the French as “vivaces;” but the best description is that of Dr. John Clarke, although it is not unexceptionable, namely the Cauliflower Excrescence.

The peculiarities of this tumor are, that it has the appearance of a cauliflower; that it produces an excessive watery discharge; that it destroys life, not by extension of the mass to the surrounding structures, but by the weakness it induces in the system; that it is usually confined to the os uteri, although it has been observed in the uterine cavity (Gooch), and upon the walls of the vagina (Case No. 5.), and lastly, when *entirely* removed that it does not return.

This growth, on examination by touch, presents a rough insensible surface, having larger and smaller lobes, which give you the idea of the character of the plant from which it is named. Sight confirms this impression; by the use of the speculum, it is found to consist of small globules, collected into masses of greater or less magnitude, projecting more or less from the surface. It is accompanied usually by a profuse, inoffensive, watery discharge, with occasional bleedings, more or less severe, and it is unattended with pain, so that the patient is left for a considerable time unconscious of the existence of the disease.

This disease was first described by Dr. John Clarke in the year 1809, and he then gives it its distinctive name, and the

following is his description of it.* He says: "The cauliflower excrescence always arises from some part of the os uteri. As several of the early symptoms are not very distressing to the patient, the tumor, at the beginning, is rarely the subject of medical attention; the first changes of structure have not therefore been observed. I do not recollect that I have ever met with a case in which the size of the tumor was less than a bird's egg. At this period it has made an irregular projection, and has a base as broad as any other part of it attached to some part of the os uteri. The surface has a granulated feel. Considerable pressure applied to it, or handling it, does not occasion any severe pain. The remainder of the os uteri will, at this period, be found to have no sensible alteration of structure. By degrees, more and more of the circle of the os uteri, and the external parts of the cervix uteri, become affected by the same morbid alteration of structure, until at length the whole is involved in the disease. The growth is in some cases slow, but in others so rapid, that in the course of nine months it will entirely fill up the cavity of the pelvis, and block up the entrance of the vagina."

This is a rare disease. Dr. Ashwell has not seen more than a few cases of it, and Dr. Lever has only seen three, although he has recorded three hundred and fifty cases of cancer of the womb. I have seen two cases in the living, and one in the dead subject.

It is found equally in the unmarried and virgin, as in the married and those who have borne children.

Its origin is traced to no cause, but in married women it is said to have arisen after excessive coition, or from injury to the os uteri consequent on difficult labour. But it is found that this disease is not frequent among those of abandoned habits, and many difficult labours occur when the os uteri is injured, without its producing cauliflower excrescence; so that at present we are unable to attribute any cause for this disease.

The Pathological Anatomy of the Cauliflower Excrescence.—

* See a paper in the *Transactions* of a Society for the Improvement of Med. and Surg. Knowledge, vol. III. p. 324.

This tumor invariably grows upon the os uteri, that is, just within its lips, and is seldom found to extend into the uterine cavity. It commences by a number of small granulations or warty excrescences, which gradually increase, are firm to the touch, and divided into small portions, having many clefts passing down to their base, which, at the commencement, is as large as any other part of its structure; in fact, its appearance is that of a cauliflower.

One peculiarity has been observed, namely, that hardly a preparation of this disease can be found in any of the museums; because, always after death, the tumor which had formerly occupied the whole vagina, disappears, and on *post-mortem* examination, only a mass of shreds can be seen. If a ligature be applied to a tumor of this description, a mass does not always come away, but you find that it encircles a few ligamentous shreds, which, previously to their stricture, had been so large as to cause great difficulty in applying it. I saw a singular case of this sort, where a surgeon had made several attempts to encircle a tumor of this description by a ligature, but the mass was so large, and the opening to the vagina so small, that it entirely prevented its application; at last the patient, worn out by the profuse watery discharge, died. I was present at the *post-mortem* examination, and we could find only a few shreds, but no trace of the tumor which had formerly filled the vagina. The same circumstance took place also in Case No. 5.

The density of this morbid product varies: in some cases it is very friable and breaks down under the fingers; but in others it is hard and firm, although it may still disappear after death. This fact is also noticed by Dr. Montgomery, who endeavours to explain it: he says, "The density of certain portions of the tumor I believe to be produced by the infiltration of blood and lymph into the cellular and laminated structure, which enters so largely into the constitution of these growths, as we shall see more in detail. In this condition, such portions of the morbid growth do not, and indeed cannot, collapse, as they otherwise would when it is separated from its attachments: and I may

observe that it is only in this state that specimens of the disease can be preserved in a museum."

Although the structure of the tumor is so vascular, it does not give rise to hæmorrhages: any external injury, however, produces bleeding, and it generally follows coition, examination, violent emotions of the mind, the acts of sneezing, coughing, and defæcation.

This kind of tumor is very liable to be reproduced after its excision; the slightest portion of the disease, if left, gives rise to a large tumor. This fact suggests the necessity of *entire extirpation*: and from observation it may be laid down as a rule, that unless the part from which the morbid product grows is extirpated, the tumor will be reproduced.

On examining a portion of the tumor taken away in Anderson's case,* the granulations appeared to be covered with a fine membrane, producing a shining appearance, and small vessels were distinguished ramifying over it. When a portion was squeezed between the fingers, the substance became pulpy.

Under the microscope, these lobules were found to be covered individually by epithelial scales resembling those of the mucous membrane; and each was composed of nucleated cells, with here and there a blood-vessel ramifying on it, but the tumor was not apparently vascular. The edge of the lobules, with epithelial scales, appeared as if impacted one upon another; beneath which, from its circumference, where the cells were much compressed to its centre, cells became gradually developed. There was no appearance of fibrous tissue, nor any of the caudate cells indicating cancer. This then was the result of a careful examination of a part of this tumor removed during life by Dr. Richard Quain and myself. The following is a description of a portion examined in the same way after death. When a piece of the tumor, the only remains of which were in small detached clusters, was taken and placed in water, it appeared to be made up of a number of villi, apparently attached to a central substance of more firm consistence. It was composed of nucleated cells

* See Case No. 5, (Anderson).

of large size, some circular, some oval, and others elongated oval; these contained a quantity of granular matter and a well-defined nucleus, which appeared to contain a cavity filled with a quantity of granular matter. The two together had the appearance of a cell within a cell, or a compound cell. These cells were connected by fine filaments like cellular filaments. From this examination we conclude that the tumor is composed entirely of cells, and that these are covered by an epithelial membrane; also that it was of simple structure, and not malignant.

We will now inquire how far our examination has agreed with older and better observers. Dr. Anderson, of Glasgow, has given a very minute account of a portion of a cauliflower excrescence taken from a patient who had had the tumor tied :* he says, "The tumor was tied, some pieces broke off, and I dissected them carefully under water and a lens. They were nodulated, irregular, and so soft as to be easily crushed by the fingers. One of these pieces was two inches long, and after being slightly macerated and hung in spirits, had exactly the appearance represented in the 'uppermost of Sir C. Clarke's figures. On making a section of a portion of the tumor with a knife, its structure was seen to be much more complex than it seemed to be when examined outside. It was finely laminated, appearing in sections, as if formed of somewhat parallel plates of a whitish matter. These plates are separated from one another by reddish lines, which proved to be the layers of a membrane, beautifully vascular, but very thin. The membrane was placed within the formerly described layers, or rather they seemed folded round its laminæ, so that the external surface of the mass was formed by the foldings of the thicker substance, which then dipped into the tumor. There was no structure present resembling what Sir C. Clarke has described as a general, investing, vascular membrane. In a morsel of the membrane, highly magnified, I could detect a fine fibrous structure, of great delicacy, absolutely swarming with blood corpuscles and cells, to the presence of which a great part of its apparent thickness seemed due. The

* See *Dublin Journal*, 1845, vol. xxvi. No. 78, p. 402.

course and distribution of the capillary vessels could not be distinguished with sufficient exactness. Besides the corpuscles which retained their form, there were others apparently undergoing various changes, exhibiting every variety of shape, and mixed with nucleated cells of different aspects. Of the latter, some were clean with a single nucleus, others exactly like Dr. Barry's figures of the ovum in certain stages, being full of young cells; there were caudate corpuscles like those Müller saw in cancer and other bodies of various shapes. For the white laminæ, examined in the same way, no fibrous basis existed; the whole consisted of a uniform mass of cells, precisely alike, of an irregular form from mutual compression, and full of a granular matter.

"Desirous to find whether the tumor was simply laminated, I macerated a bit of it in water. It at first unravelled itself slightly, so as to assume a lobulated form; and on continuing the process for several days, the white matter was gradually washed away in minute particles, and the membrane remained entire. It did not consist of parallel laminæ, but was beautifully flocculent, branching very completely from a central portion or stalk. The preparation so formed has some resemblance to a piece of macerated placenta, but a much closer one to certain sea-weeds, the frond of which is flat and thickly tufted.

The structure of the cauliflower excrescence was now manifest. The basis is a membrane of extreme tenuity, ramifying most complexedly, amply supplied with blood, and possessing the power of forming from that blood a whitish cell substance, which is deposited on a layer around it. Hence each portion of the membrane forms, after maceration, a kind of lobule or flat villus; but in the recent state they adhere closely together, so as to give the whole tumor a nodulated aspect."

Dr. Simpson's observations* upon the minute structure of this diseased growth agree very nearly with our own. He says, "One submitted some very thin slices from the surface of the section of the tumor to a powerful microscope in the possession

* See *Edinb. Med. and Surg. Journal*, 1841

of Dr. John Reid: it was seen to be composed of a number of cells, arranged in some places in groups, in others in irregular lines. These cells contained each a large nucleus, and the nucleus enclosed several large nucleoli. . . . It may be interesting to add, that none of the caudate or spindle-shaped bodies, described by Müller as often existing in morbid cephaloid structures, were seen in any section examined."

From the observations thus made, the cause of the disappearance of these tumors, either after death or the application of a ligature, appears to be the draining away of the white cell substance by the stoppage of the circulation which produces it. Consequently the only portion left is the seat from whence the cell substance was produced, viz. the blood-vessels.

In speaking of this cell substance Dr. Anderson says, "I consider therefore that the white substance which constitutes the bulk of the structure, is formed by the membrane as a matrix, and from the blood, with which that membrane is supplied, by a change of the corpuscles. I had no opportunity of examining the watery discharge so characteristic of the disease, but I believe it will be found to flow from the white substance directly, probably from the bursting of the external layer of cells, they being so quickly produced within; that thus a constant drain of blood is going on, made more exhausting by occasional actual hæmorrhage, when the tumor happens to be congested or accidentally injured."

I took an opportunity of carefully examining the discharge in Anderson's case, No. 5. It was of a brownish colour, tenacious to the touch, and of a faint odour; it had the appearance, when in large quantities, of saliva coloured. Under the microscope we found that it was composed of an immense number of nucleated cells, principally of an elongated oval form, containing some granular matter, and each cell was provided with a distinct nucleus: a quantity of granular matter was seen floating in all directions in a thin fluid, which contained a number of epithelial scales. These appearances go far to establish the opinion proposed by Dr. Anderson, that the discharge is dependent on

the effusion of cells from the blood-vessels, and thus its great exhausting power is explained.

Is this growth carcinomatous, or not?—We find that good authorities are divided upon this question. Drs. Gooch, Hooper, Davis, Ashwell, and Lee regard it as truly cancerous; whilst others, as Drs. Clarke, Burns, Simpson, and Walsh, consider it as a morbid tissue not necessarily of a malignant or carcinomatous nature. The principal argument used by the former practitioners is that of its liability to be reproduced after operation. But we find that if the whole of the disease be removed, it does not return.

I agree with those who suppose that the cauliflower growth is not carcinomatous, and there are many circumstances to favour this presumption. In the first place the patient enjoys generally good health throughout the disease. In Anderson's case, No. 5, there was no pain like that of cancer; the disease was unnoticed until it had attained a considerable size, whereas, in cancer, it is almost the first and prominent symptom. There is no great absorption of fat, as in those who die of cancer (Clarke). Again, it occurs early in life: Sir C. Clarke has seen a case at the age of twenty. It is confined to a particular part, and does not involve other strictures: however, when the disease is of long standing, it may involve the upper part of the vagina; I have seen this in two cases. I think then that these reasons are sufficient to justify the opinion that these growths are not cancerous.

Several cases are now on record, where this disease has not returned after its entire removal, by Drs. Simpson, Montgomery, Boivin, and Duges, and in my mind fully establish the proper treatment of the disease. In the case No. 5, the entire disease might have been removed had not the complication of a cyst, attached to the uterus, been present, preventing the uterus from being drawn down to the vulva.

The Symptoms of this disease arise very insidiously, and the medical man is not consulted until it is somewhat advanced. The attention of the patient is at first excited by the parts being

slightly moister than natural; at length she perceives a distinct discharge, clear like water, not offensive, and only causing annoyance by its quantity. The discharge may become tinged with blood, hæmorrhage may occur, especially after coition, and assistance be required.

At first the general health of the patient is apparently good, perhaps robust, her countenance florid and healthy.* She complains of no pain, except a slight heaviness in the loins and thighs, and her anxiety is only connected with the discharge; this she informs you has increased rapidly, is now very copious, thin like water, without smell, and stiffens the linen like starch: this discharge is the characteristic symptom of the disease. It becomes in a short time very great. Sir C. M. Clarke† has seen a case, “when it required the application of twenty or thirty napkins daily to keep the patient at all comfortable.” Dr. F. H. Ramsbotham says, “Some idea may be formed of the excessive quantity of the discharge which escapes in this disease, when I mention the fact that a lady, who was under my care for more than a year, during the principal part of that time was obliged to use twenty dozen napkins every week, and each was so thoroughly soaked through, as though it had been dipped in water.”

The source from whence this discharge comes is from the vessels of which the tumor is made up, and frequently its quantity depends upon the extent of the surface which produces it. Sir C. M. Clarke thinks that the vessels secrete the discharge and its quantity “is in proportion to the superficies of the tumor.” Dr. F. H. Ramsbotham supposes that the discharge entirely consists of the “serum of the blood escaping through the orifices of the vessels, too small to admit the red globules or other firmer parts.” Dr. Anderson, of Glasgow, has been led to the opinion, from his microscopical researches in this disease,

* It is worthy of remark, that where there is fungoid cancer, even to a great extent, the health and appearance of the patient suffers but little; but when the cancer is in its ulcerated stage, the effects upon the constitution are rapid and marked, and the peculiar appearance of the face in cancerous affections becomes evident.

† Observations on Diseases of Females.

that the discharge arises from the continual bursting of a layer of cells which he states surrounds the blood-vessels, and which they have the power of forming, so that a profuse discharge is produced by the constant bursting and reproduction of these cells. I examined microscopically some of the discharge in the Case No. 5, and found it to be composed entirely of cells floating in a clear fluid, mixed with epithetic scales. This observation appears to agree with those of Dr. Anderson's.

Hæmorrhage is a constant attendant on this form of disease when any injury is applied to it, but no spontaneous bleedings ever occur. In the first instance the patient will complain, that after each act of coition there is a slight discharge of blood; she is unable to account for it, and it is accompanied with no pain. The menstrual periods are quite regular, perhaps more frequent, and excessive floodings now and then arise. These losses of blood are not so permanent in this as in other diseases of the womb, but they do occur, and are generally accounted for by some distinct and definite cause. Defæcation frequently occasions a great loss of blood; examination always does so more or less; excitement of the mind, coughing, sneezing, and all injuries produce the same effect.

The catamenia are not affected in the early part of this disease; the discharge however soon becomes more abundant than in health, and the period is apt to last longer: blood is very often effused with the catamenial secretion. When the constitution becomes much weakened, menstruation is less regular, and in the last stages of the disease it observes no regular period (Clarke). These facts were all observed in Anderson's case, No. 5.

When the discharge and the hæmorrhages have continued some time, the effects of loss of nutrition become apparent. The digestive organs first suffer; the food does not undergo its proper changes, eructation and flatulency are produced, and the capillary vessels lose their tone to such an extent as to effuse serum into the loose cellular tissue of the body, producing œdema of the eyelids and ankles. Hysteria is present, and the patient becomes exsanguine.

The tumor itself possesses no sensibility, but pain is occasioned when it is pulled from its base. In Case No. 5, the tumor could be severely pinched without being perceived; but directly the tumor was pulled from its attachment into the vagina, the expression of pain was immediate. Although the tumor itself is insensible, patients are variously affected with regard to pain, more particularly in the neighbouring parts. When the tumor is large, there is generally the symptoms of pressure producing pain in the neighbouring organs; there is also pain in back, loins, and thighs. Dr. J. Clarke says, "In the commencement of the disease no pain is felt, but during its progress, pain in some cases is experienced. Generally, in advanced stages of the disease, the subject of it feels pain in the back and in the direction of the round ligaments of the uterus: the pain is not described to be lancinating, as in cancer, and is by paroxysms, without any sensible aggravation; but, on the whole, after the patient has been long in a perpendicular attitude."*

At the commencement of the disease the tumor is attached only to the os uteri and cervix. That of Case No. 5 was placed on the inner surface of the posterior lip, the anterior lip being healthy; but during its later stages this disease has the power of extending itself to the neighbouring structures. It may attack the whole circumference of the neck, as recorded by Sir C. Clarke and Dr. D. Davis, and it may extend itself to the upper part of the vagina, as happened in Case No. 5, and in one I have lately seen in Guy's Hospital.

When the disease is recent and in a virgin, the growth is slow, owing to the great contraction of the vagina and the pressure it exerts upon it; but when the parts are greatly relaxed, either by the effects of child-bearing or the relaxation from the disease, the growth is very rapid and more quickly fatal.

Examination per vaginam.—In the first stage of the disease you will feel a small granulated tumor attached to some part of the os uteri, generally the posterior lip, insensible to the touch,

* Op. cit. vol. III. p. 528.

and bleeding after examination. When viewed through the speculum, it is found covered with coagulated blood, which has a darkish venous appearance: when the coagulum is wiped off, it has a pale yellowish red colour. Dr. F. Clarke describes it as of a bright flesh colour; but in Anderson's case it had more of a yellowish tinge.

The irregularities felt on examination are now found to be produced by a number of granules of various sizes, "resembling very much the structure of a cauliflower which has run to seed."* "In some cases," says Dr. F. Clarke, "it is of a brittle consistence, so that small parts may come away if touched too rudely, and such pieces generally appear very white." These portions also possess a degree of transparency, which Dr. Montgomery thinks is a distinctive character of its growth. "I may observe here," says Dr. M., "that one of the most distinctive characters of this growth, when brought under inspection during life, is the semi-transparency of many of the superficial granules, which present to the eye very much the same appearance as the vesicles occasionally visible on the surface of the ovary."

The case at the end of this chapter presents points of considerable interest. I had the opportunity of observing this disease from its commencement, and closely watching it to its close. When under Dr. T. Taylor, University College Hospital, in 1843, the disease had all the appearance of a non-malignant one, the attention being directed to the uterus only from the uneasiness felt in that part. On examination, the posterior lip of the uterus was found covered with a few large granulations; these were removed by the application of caustic; and when I saw her before her discharge from the hospital, the posterior lip of the os uteri presented the appearance of a "granular surface." However, these granules formed the nidus for future disease. When she presented herself to Dr. Murphy in 1844, the tumor had become as large as a walnut, of irregular surface, and hanging into the vagina; her health was good, and she complained only of an excessive discharge. The uterus at this

* Op. cit. p. 326.

time was supposed to be enlarged, and placed an obstacle to the operation of amputating the cervix uteri, which was then proposed. However, the tumor itself was removed as fully as circumstances permitted, although the surface from which it grew still remained; and this again became a cause for its reproduction. After this operation she became comparatively well, the discharge ceased, and she left the hospital. A few weeks subsequently she was seized with an acute attack of peritonitis, which was with difficulty subdued; during which time the tumor so rapidly increased, that she was obliged to be readmitted into the hospital, when it was found that during the short space of two months the tumor had entirely filled the vagina. The discharge now was very excessive, but not of that peculiar watery character usually attributed to this disease, but was more mucous, and had a faint fœtid smell: she never had severe hæmorrhages, but there were occasional bleedings.

Diagnosis of Cauliflower Excrescence.—If a proper examination be made on this disease, it is not difficult to distinguish it; but it has been mistaken for other growths. The most likely one is that arising from fungoid cancer: a case of this kind occurred to myself. A patient presented herself with all the symptoms of cauliflower excrescence, profuse watery discharge, no pain, health good, &c., and had from the os uteri fungoid granulations, some of which broke down upon examination: but on viewing the growths by the speculum the error was immediately corrected—they were large, flat, and not prominent.

This may be mistaken for polypoid growths. In cauliflower excrescence you always find an irregular tumor, insensible to the touch, and attached to the os uteri by a broad base; there are no distinct hæmorrhages, but there is a peculiar watery discharge. In polypi, on the contrary, there are frequent bleedings, the tumor is smooth and insensible to the touch, and is usually surrounded by the os uteri.

Sir C. Clarke says that it has been mistaken for the placenta before the head in labour; and that he was sent for to give his opinion in such a case. The mode of distinguishing this disease

is to mark accurately the position of the os uteri: this disease is situated *on it*, while in placenta previa the placenta is *within* the os uteri, and surrounds the protruding part.

Prognosis.—An opinion on this disease should always be carefully given. The patient becomes weakened by the continued loss from the discharge, aggravated occasionally by hæmorrhages so as to produce extreme exhaustion, and she may die from loss of power to resist the disease. The prognosis may be more favourable if, the uterus and vagina being healthy, the disease grows from a part, and not from the whole, of the os uteri. The same is true if the disease be in a virgin, rather than in a married woman; for in the former the constriction of the parts represses their growth, whereas in the latter the vagina is more lax, and gives greater space for its development.

Treatment.—When a patient presents herself for treatment, and the disease is in its first stage, great benefit arises from local bleedings and strong astringent injections, as alum and oak bark. These later remedies answer a double purpose, which ought not to be lost sight of. They not only moderate the discharge from the surface of the tumor, but also greatly diminish the capacity of the vagina, by corrugating its mucous membrane and strengthening the tone of its muscular fibres, so that, from the pressure thus exerted on the tumor, its growth is moderated.

When oak bark, or any preparation of astringent qualities, is used, we should inform our patients, that they may observe the discharge of a number of small solid flakes of a whitish character: these are nothing more than the albumen of the discharge coagulated by the tannin of the injection.

The patient should avoid all excitement, remain in the supine posture with the pelvis elevated, apply cold to the parts, and endeavour by every means to obviate local congestion.

This palliative treatment has been successful under the management of Sir C. Clarke; and relating a case which terminated favourably, he says, “No mystery of treatment hangs over it; very little medicine was given except what has been mentioned, a few grains of hyoscyamus or conium to allay irritability, a little

Epsom salts to regulate the bowels, and when little else but weakness remained, a few drops of Tinct. Ferri Muriatis twice a-day. To the local bleeding, the horizontal posture, and the use of astringents, then, must be attributed the removal of this disease, which had all the characters of cauliflower excrescence." After this patient had been cured he made an examination, and he found "that the vagina was so much contracted by the continued use of the astringents, that it admitted the finger with difficulty: on carrying the examination further, no difference could be felt between the os uteri of this patient and that of a woman in perfect health."

In some cases this treatment may succeed, but in many others it more frequently fails, and other means must be resorted to for the effectual cure of this disease. The one which is most to be depended on is the entire removal of the tumor and the part on which it grows. This operation has been successful under the hands of Drs. Montgomery and Simpson,* and is the one I should always have recourse to if the uterus were healthy. Dr. Montgomery uses the ligature, but includes the portion of the womb on which the tumor grows. In the case he relates it appears to have been of little consequence, but in most cases the stricture of any part of the uterus is generally productive of serious symptoms. If practicable, I should prefer excision in these cases. Dr. Simpson's mode of performing this operation of excision is the following. "The patient was laid upon her face, her body placed across the bed, and her lower extremities allowed to hang over the front of it; the thighs were held separate from one another. "My object was," says he, "to pull down the diseased neck of the uterus until it protruded externally beyond the mouth of the vagina, and then freely excise it. I pulled down the neck by a long velsellum, gradually and cautiously, until it was entirely protruded beyond the external parts. I cut off the protruding mass, dividing it from behind forwards, and removing the whole vaginal portion of the cervix

* See case in *Dublin Journal*, 1845, Vol. xxvi. No. 78, p. 402; also *Edinburgh Med. and Surg. Journal*, for 1841.

uteri. The uterus immediately slipped up into its natural position, and very little hæmorrhage followed." The position used in lithotomy appears to be the most preferable, because that position fixes the uterus to a greater degree downwards, and therefore the uterus can be drawn out of the vagina in a more easy manner.

The application of caustics has been recommended so as to destroy the fungus: when small, this plan succeeds, but cannot be relied on. If the tumor alone is cut off, the full application of caustic to the cut surface is very beneficial.

CASE (No. 5).—*Cauliflower Excrescence of the Os Uteri.*

Peculiarities.—The first appearance of cauliflower excrescence. Apparently cured by the application of nitrate of silver. Return of the tumor. Excision of it. A second return. Death. Shrinking of tumor after death. Microscopical appearances of the structure of the tumor and discharge.

Sarah Anderson, ætat. 40, is married, and apparently in good health; has had seven children and seven miscarriages.

On the 1st of June 1842, she overexerted herself while pregnant, which produced a severe miscarriage, accompanied with very great pain and flooding. However, she recovered from its effects without medical assistance, and quite regained her health; the pains and discharge having entirely left her, she became pregnant in October last, when again a miscarriage took place after having received a severe fall. Since this time she has suffered from pains in the back and loins, and in consequence of their increase she came into the University College Hospital, under the care of Dr. John Taylor, June 13, 1843.

She then suffered from rheumatism, with pains in the back and loins, also a bearing down pain, with a discharge, *per vaginam*, resembling milk. On the 16th, an examination was made, and the uterus was found not to be enlarged, "but the

posterior lip of the os uteri felt rough and rugous. By the speculum the anterior lip was seen to be reddened, whilst the posterior presented a fungous cauliflower growth." She remained under treatment until the 31st of July, when she was discharged cured, there being no discharge, and "there was no longer a cauliflower excrescence on the posterior lip of the os uteri, which merely presented a rough granular surface," to which the caustic was applied.

This patient presented herself to Dr. Murphy, Sept. 7, 1844. Since leaving the hospital, she has always experienced pain more or less severe in the region of the uterus, and has had the catamenial returns more frequently—every fortnight. The countenance is florid and healthy, and she states that she enjoys good health. She complains however of severe pain in the back and loins shooting through the womb, which is increased on walking or on any exertion. There is a very profuse, viscid, yellowish coloured discharge tinged with blood.

Examination per vaginam.—The os uteri is hard and tender to the touch, the anterior lip is free, the posterior is covered with a large warty cauliflower excrescence, which is not tender on pressure, but when pulled from its attachment produces pain. This projects some distance into the vagina, has a broad base, and occupies the space of half-a-crown: caustic was freely applied.

Sept. 17. General appearance is good, pain and discharge much less, although the latter is profuse.

Examination per speculum.—The tumor has quite the appearance of the top of a cauliflower; it is covered by a venous bloody discharge, which being wiped away, the tumor is found to be of a pale yellowish red colour; it is of the size of a large walnut, not painful on pressure.—Oct. 24. Discharge has increased in quantity, but it is not offensive; she uses several napkins daily; the tumor has appeared to increase; there was observed a hard tumor above the pubis as large as a cricket-ball, painful on pressure; there is no sign of fluctuation, and its situation was quite to the right of the mesial line.—Nov. 1. The tumor of the abdomen is

evidently connected with the uterus, their movements accurately coinciding. General health still continues good, discharge very profuse, excrescence much the same.—Nov. 15. The excrescence bleeds on examination, has a venous congested look, tumor above the pelvis just the same but not painful.—Dec. 2. The discharge is more bloody and the tumor is larger; this continued gradually to increase up to the time of her admission into the University College Hospital to undergo an operation.

This patient was admitted under the care of Dr. Murphy, Feb. 20, 1845; she then presented the same appearances, countenance florid, health apparently good. On examination, the abdomen was enlarged, and a tumor was felt in the right groin extending towards the left. The discharge continues and is generally mixed with blood once a fortnight, at other times it is of a yellowish colour, which latterly has been extremely offensive and profuse.

Examination per vaginam.—There appears to be a tumor, about the size of a small orange, like the top of a cauliflower, having prominences and depressions hard, rough, and firm to the feel, its attachment is broad, and to the posterior lip of the womb, there is no pain on pressure, and the tumor is covered by a bloody discharge. The tumor is decidedly attached to the posterior wall of the uterus.—Feb. 21. Dr. Murphy, in the presence of several medical men and myself, proposed to remove the increasing tumor. The patient was laid on her back in the same position as that used in the operation for stone; it was seized with a velsullum, in order to pull down the tumor to the external parts: this, when the uterus is healthy, is easily accomplished, but in this case the tumor, attached to its posterior wall, prevented its descent; Dr. M., however, pulled it down as low in the vagina as possible, and, with his fingers as a guide, cut off the tumor with a pair of curved scissors. This operation was unattended by pain, except that arising from the distension of the vagina: there was no bleeding, but she felt faint after the operation. On examination the vagina was plugged. After the operation a small piece of the tumor was found at the upper

part of the neck of the uterus, which it was impossible to remove.

Description and Examination of the Cauliflower Excrescence after its excision.—The tumor was divided into small pieces, but they all possessed the same appearance and texture. (See Plate I. fig. 1.) It had a warty aspect, and appeared as if it were attached to a broad base: it was quite like the surface of a full-grown cauliflower, being divided into a number of lobules of different sizes, varying from that of a pea to that of a small button, connected together by a broad base. The whole surface had a shining appearance, and vessels were seen here and there to ramify over it and between its lobules, but they were not numerous. It had an offensive smell.

Under the Microscope.—The lobules were found to be covered individually with epithelial scales resembling those of the mucous membrane, and their structure that of nucleated cells. The tissue was not vascular: from the edge of the object to the centre the cells became gradually larger, but assumed different shapes, according to the degree of pressure they received. There was no appearance of fibrous tissue nor any caudate cells.

The plug was shortly withdrawn, and astringent lotions frequently applied.—Feb. 26. An examination *per vaginam* was made, and no tumor resembling cauliflower excrescence could be found. The os uteri was ragged from an incision made in one of its lips, and the parts appeared healthy.—March 1. Feels quite well, and states that the catamenia has appeared naturally.—March 6. On examination *per vaginam*, the os uteri felt rough and granulated, more especially posteriorly: the anterior lip has been divided. Some distinct granulations through the speculum were seen overhanging the posterior lip, to which caustic was applied. Pt. injectio.

Soon afterwards she became an out-patient. During the latter end of the month of March she had a severe attack of peritonitis with well-marked symptoms. This was subdued under proper remedies, and she recovered in about a fortnight. However, during this illness and its convalescence, the cauliflower ex-

crecence had again appeared, and had increased so rapidly, that it became necessary that she should be again admitted into the hospital.

On her admission, May 1, 1845, she presented an appearance which indicated that she was labouring under severe inflammation of the lungs, produced by exposure to cold a few days previously. This, in a great measure, yielded to treatment.—May 28. Countenance pale and very sallow; complains of great loss of strength, of slight pain at the bottom of the stomach, increased on pressure; the size of the abdomen is 32 inches, and there is a discharge from the vagina of a dirty white colour, very profuse and offensive; she has a disagreeable smell, a “foulness” within herself, appetite bad. On examination, there is pain in the right groin, increased on pressure, but is less than before; a tumor is distinctly felt in this position; there is no emaciation, the abdominal walls being covered with fat.

Examination per vaginam.—The vaginal canal and the whole pelvis seem occupied by a large cauliflower excrescence, firm to the touch, but not tender on pressure. The tumor does not break down on examination, nor does any bleeding follow. The growth nearly protrudes from the vagina, and on pushing it upwards pain is felt in the uterus. Bowels open, urine natural, pulse 90 to 100. The discharge is very profuse.—Sept. 15. During the month of August had another attack of inflammation of the lungs, which again abated under treatment, but left her in a very weak state.

Examination per vaginam.—The tumor is larger and now partially protrudes between the vulvæ. It occupies the whole of the pelvis, and can be felt extending slightly to the upper part of the vagina. The discharge is very profuse and offensive, it is of a dirty brown colour, and latterly has greatly increased in quantity. Evidently sinking; and she died on the 20th of September, 1845.

The *post-mortem* examination was made sixteen hours after death. The body was not emaciated, and on opening the parietes of the abdomen there was a thick layer of fat found.

The intestines at the lower part of the cavity were very securely bound down to a tumor which occupied the pelvis. This tumor appeared to be divided into two parts: that on the left side was composed of the uterus in its healthy state, of its natural size and figure; that on the right was found to be the left ovary, much enlarged, containing a pint of fluid, which was of a dark brown colour, and contained an immense quantity of beautiful shining flakes, which we afterwards discovered, by the aid of the microscope, to be cholesterine. This cyst was very intimately attached to the back part of the uterus almost throughout its whole extent, and the left fallopian tube adhered closely to it. The symphysis pubis was divided, and the pelvic organs entirely removed. The vagina was now opened, and no tumor found; that which had formerly occupied it having almost entirely disappeared. The os uteri was surrounded by a number of shredy filaments, which were clustered together in some parts, and the same appearance was observed on the upper and posterior portion of the vagina, where it comes in contact with the neck of the womb. These filaments were very friable, and broke down under the action of a weak stream of water.

The uterus was now opened. The inner surface of the neck presented, for a few lines from the os uteri, a dark blueish aspect, somewhat like the commencing action of gangrene. None of these filaments were apparent in the neck of the womb. The whole of the other portion of the uterus was healthy.

The vagina was of a dark colour, but no filaments were observed except at its upper portion, where it was attached to the neck of the womb. In none of the other viscera of the abdomen or chest was there any sign of malignant deposit. The glands of the abdomen were healthy. The liver was adherent to the diaphragm nearly to its whole extent; it was enlarged, and presented the nutmeg character. The lungs on both sides were bound to the pleuræ by old adhesions; the left presented the morbid appearances of the two last stages of pneumonia, it was infiltrated with pus, and the lower part hepatized; in some por-

tions of the right lung the same state was observed. The head was not open.

Examination of the Discharge from the Tumor.—Assisted by Dr. Quain, I carefully examined some of the discharge found in the vagina, and which presented in every respect the same appearances as that discharged during life. It presented the following characters: it was of a brownish colour, tenacious to the touch, and disagreeable odour. When in large quantities it appeared like saliva coloured.

Under the microscope we distinctly saw that it was composed of an immense number of nucleated cells, principally of an elongated oval form, containing some granular matter, each cell being provided with a distinct nucleus. A quantity of granules were seen floating in all directions in a clear fluid. There were also an abundance of epithelial scales.

The Microscopical appearance of a portion of the Tumor removed after death.—When a portion of the filamentous mass was detached, it appeared to be made up of a number of villi producing substance, and apparently attached to a central portion. It was composed of nucleated cells of large size, some circular, some oval, some caudate-elongated oval. They contain a quantity of granular matter and a well-defined nucleus, having the appearance of *cell within a cell*; the central cell in most instances contains itself a quantity of granular matter. These cells are connected by fine filaments like cellular filaments.

The appearance of the Cyst. This was one entire smooth cavity, at the bottom of which were several spaces tinged of a dark colour. It was filled by a fluid of a dirty brownish yellow colour, suspending an immense number of beautiful crystalline scales, which, under the microscope, were found to be composed of laminated squamæ, or more properly rhomboidal scales of cholesterine. No remains of the ovary could be found on the left side. The fallopian tube closely embraced the tumor. The right ovary was healthy.

CHAPTER V.

ENCEPHALOID POLYPL.

It is not our intention to enter upon the description of malignant diseases of the womb, further than to illustrate their peculiarities when they become polypoid; and the most frequent polypoid growths are those resulting from encephaloid disease.

These encephaloid tumors are not uncommon, and several cases came under my care within a short time of each other, and illustrate well, the nature, symptoms, and termination of the malady.

Pathology of Encephaloid Tumor.—Dr. Walsh has simplified the subject of cancer to a very considerable extent, and has classed a great variety of tumors under one head: he has collected the synonyms of disease and reduced them to form, and the result is, that he has divided the genus cancer into encephaloid, scirrhus, and colloid disease, thereby doing away with a mass of confusion, which otherwise obstructed the pathological anatomy of these morbid productions.

Encephaloid disease receives its name from its resemblance to the healthy brain of an adult; it is composed of a white substance enclosed in septa of different sizes, and presents a number of bloody points in various directions. In one case I had an opportunity of examining the tumor directly after it was taken away and before it became softened by decomposition, and I found it to present the following appearances. It was a polypoid growth, arising from the posterior lip of the uterus, which was so soft, that the ligature cut its way *at once* through it. Its form was rounded, except at one point where a distinct tumor proceeded from the mass, its surface was uneven and lobulated, and it had a blueish white appearance; it was about the size of the

fist. On cutting into it, it was found to be composed of encephaloid disease, having septa in all directions, the interstices of which were filled up with a brain-like matter, and when torn the surface presented a number of coarse granulations. The lobe that projected from the mass, when cut into, was found to be composed of one septum, and the contained mass appeared to radiate from the centre to the circumference. On handling the tumor when attached it usually bled, but there were no hæmorrhages unless produced by injury. Some portions of the tumor were denser than others; for instance, a few of the external lobuli communicated a sense of fluctuation, while the inner portions of the tumor were firm and hard, resisting pressure.

The principal supply of blood to these tumors is arterial, but "the vascular character is in some instances distinctly defined, in others ill marked." "The vascular supply (says Dr. Walsh)* is not limited to the divided septa of the structure; the vessels may be traced from the cellular substance investing the growth generally, or from the peduncle of a tumor, when its attachment to the surrounding tissues is of this kind, may be seen to ramify into the septa, and from these to plunge into the contained matter. . . . Besides the vessels communicating with external trunks, there are seen in the substance of an encephaloid growth, small vascular tufts, apparently unconnected with the surrounding circulation, assuming various shapes, of which the most common variety is a single minute trunk, terminating at either end by a number of ramusculi branching off in a stellate form." As we have stated, the principal supply of blood is arterial, but there is a plentiful appearance of veins around and on the surface of the tumor: when such are injected, more are seen in it. The greater appearance of arteries than veins in the structure is accounted for on the supposition that the latter, on traversing the growth, are entirely blocked up by encephaloid matter.

"The microscopical appearance of the growth (says Dr. Walsh) presents three varieties:—

* On Pathology of Cancer.

1st. Encephaloid, characterized by predominant formation of medullary matter, from roundish formative globules, deposited beside the tender fibrous meshes, intersecting the mass.

2nd. Encephaloid, with an extremely soft brain-like fundamental basis, composed of pale elliptic corpuscles, without caudate prolongations. This variety is very rare.

3rd Encephaloid, with caudate or spindle-shaped corpuscles. The cavities of these corpuscula contain a granular body without a clearly distinguishable nucleus, or in other cases a nucleus with one or more nuclear corpuscles; the filamentous or caudal prolongation is observed either at one or both points of the ellipse, and is single or bifid; in some instances a third filament springs from its sides.

Its chemical characters, as stated by M. Foy, are the following:—

Albumen	.	.	.	.	47.00
White fatty matter	.	.	.	.	7.50
Red ditto	.	.	.	.	5.35
Osmazone	.	.	.	.	4.00
Fibrine	.	.	.	.	6.50
Water	.	.	.	.	8.00
Oxide of Iron	.	.	.	.	1.35
Sulphate of Lime	.	.	.	.	6.30
Carbonate of	{	Soda	.	.	2.75
		Lime	.	.	4.00
		Magnesia	.	.	1.00
Hydrochlorates of	{	Potash	.	.	2.70
		Soda	.	.	
Tartrate of Soda	.	.	.	.	0.35
					<hr/> 1000.

When encephaloid matter is exposed to the air it liquifies; it becomes hard when macerated in alcohol and the acids. The encephaloid tumor grows to a large size, even larger than any other morbid production, and when situated externally it is covered with large veins. It may either be confined to the neck of the womb, and possess a distinct line of demarcation between it and the healthy structure of the uterus, or it may involve the whole womb.

Symptoms of Encephaloid Tumor of the Uterus.—These, as far as the general symptoms are concerned, are the same as those produced by cancerous affections of other organs. You have the yellow parchment-like skin, the languid depression in the eye, the lancinating and excruciating pain in the part affected, which is usually increased at night, although the pain, in a less degree, is a continued one. The effects of impaired digestion soon arise, the alimentary canal is disturbed, œdema springs up, and the patient becomes wearied out by loss of sleep, pain, and a fatal discharge. When the disease assumes a polypoid growth, it very rapidly increases. In one case under my notice, only four months were sufficient to produce a large tumor, and in ten months after its discovery the patient died. In another, seven months were sufficient to produce a tumor which filled the vagina. This canal becomes very lax and dilated from the discharge produced by the foreign body, and therefore is unable to exert any pressure upon it, consequently the tumor becomes very large. The discharge is very offensive and profuse, it is usually watery and yellowish; an examination generally produces a discharge of blood, from the rupture of small vessels on its surface, and the finger is not uncommonly covered with a number of granules which become detached from the tumor. But it is worthy of remark that these tumors differ from ordinary polypi, in not giving rise to those alarming bleedings which characterize the latter disease; and I find in three cases where this symptom was particularly enquired after, not one of them had any extensive bleedings, and they only complained of an excessive offensive discharge, with sometimes clots at their catamenial periods, which were regular as to their time, but usually more profuse. The discharge was peculiar in one instance; it had a yeast-like character, but it is generally of a watery appearance. In all cases it was very profuse and fœtid.

Pains are usually felt in the groins and umbilicus, shooting down the thighs and back; they are not always designated as of a lancinating character, but usually as dull heavy pains,

continually present, and which become increased at night, preventing sleep. *The continuance* of the pain is exceedingly oppressive, and its fixed character very wearisome. Throbbing and shooting pains are frequently referred to the rectum.

In this disease the uterus is not always fixed, but frequently moveable; this occurred in two of the cases already referred to, and is a distinguishing mark between it and cancer. In a third case the uterus was itself diseased, and could be felt above the pubes. Pressure above the pubes frequently gives pain, even more so than when the tumor is handled, that in itself not being painful, but causing pain by its attachment to the uterus. I have seen a tumor cut through by the ligature, and cause little or no uneasiness.

The rectum is frequently affected, even when the tumor is so small as not to interfere with the functions of that bowel; there is a constant tenesmus, often throbbing, and a distressing feeling of weight, and great pain on defæcation. When the tumor increases in size, constipation and the effects of pressure are perceived; the bladder is also irritated, and painful micturition takes place, and there is sometimes retention of urine. The tumor very early ulcerates into the neighbouring organs, as is the case with other malignant diseases.

On examination with the finger you find a lobulated hard mass, of a polypoid form, possessing many smooth elevations and depressions; at its *lower part*, representing the feeling of a fibrous tumor, but nearer its attachment to the uterus, it is found to be softer, and most frequently breaks down under the slightest pressure. Small cavities may thus be entered, and give rise to bleedings, although no spontaneous hæmorrhage occurs. You find the tumor attached by a broad base, and when not large, coming from the uterus itself, and not appended to it as a polyp; it generally involves one or other of the lips of the womb. On withdrawing the finger, you find it covered with a bloody offensive discharge, and usually retaining a number of small whiteish granules like brain, being portions of the tumor itself. They grow very rapidly and fill the vagina, so that the speculum is of little use.

Diagnosis.—The encephaloid tumor is distinguished from the ordinary *fibrous tumor* by its softness of texture, the absence of hæmorrhage, by its putrid discharge, and also by the rapidity of its growth. From the soft polypi, from its arising from the uterus itself and not being surrounded by the os uteri, it grows and is a part of its structure, and not appended to it; by its very offensive discharge, the appearance of the patient, and by examination.

From the *cauliflower excrescence*, by its lobulated and not granulated feel, and its effect on the constitution; viz. in the former the patients health is robust, while in the latter it is affected by malignant disease.

Prognosis.—This is always unfavourable, for if the tumor be taken away, its pedicle or its attachment re-buds again; and if this does not take place, the seat from whence it sprang takes upon itself malignant ulceration: this has been the termination of the three cases I have already referred to. The womb also is generally affected. We can only relieve, not cure.

Treatment.—Dr. Gooch says, take away all polypoid tumors whatever be their character, “for I have seen some very much like malignant not return,” so that our patient ought to have a chance against our diagnosis. I certainly should always recommend them to be removed, at the same time acquainting the patient that the disease was likely to return. In one instance I saw great and marked relief, and in three cases I have seen it add much to the comfort, and prolong the life of the patients. In one the discharge in a great measure stopped, its annoyance and offensiveness disappeared, and during this time she actually gained flesh, and her appearance became vastly improved. In another the patient was so much recovered that she left the hospital, and is still living. This woman was suffering under great depression from the discharge, her countenance was pale and bloodless, of a cadaverous expression, and she came into the hospital to die. After the tumor had been removed by ligature, she regained flesh, strength, and spirits, the discharge became less offensive and small in quantity, and her appearance

was altogether changed for the better. In a third case ulceration followed the removal of the tumor, and perhaps the operation accelerated the disease: but however we have a fatal disease to treat, and the only indication is to prolong life with as much comfort as possible: this is done by a simple and safe operation, and therefore it is highly justifiable, and from the good effects I have seen arise from it, shall strongly recommend it.

After the detachment of the tumor, nitrate of silver or nitrate acid ought to be freely applied, so as to destroy, if possible, the remaining disease: this is sometimes effected, but more usually the malady returns. Astringent and narcotic injections ought to be used to allay pain, contract the vagina, and prevent the growth of the disease: the most efficacious formula is one composed of equal parts of the sulphate of iron and extract of conium, viz. eight grains of each to the ounce of water. The alum hip-bath, with a pound of the salt to a gallon of water, is efficacious in contracting the external parts and the vagina; it suppresses the discharge and induces cleanliness. Narcotics must be used to allay the pain incident on these affections: Extr. Conii and Hyoscyami are the best, but acetate of morphia and opium must sometimes be had recourse to, and these in large and continued doses. The tone of the system must be supported with tonics, of which iron is the best; and a good preparation is that of the Tincture of Acetate, from its agreeable taste and efficacious action. Injections are always necessary, and some of the narcotic ones greatly allay pain; the one mentioned above I find most beneficial—others may be used. Decoction of poppies, with acetate of lead, produces good effects in some cases.

When ulcerations occur, it has been recommended to apply the strong nitric acid, chloride of zinc, nitrate of silver, &c. to endeavour to destroy the morbid production. These remedies must be used with caution, and we must not be sanguine of success. The oxide of iron also has been recommended to be placed in the ulcerated cavity, in order to rouse the healthy powers of the uterus, to throw off the diseased mass; and if this

plan does not succeed, you must attend to symptoms as they arise—obviate constipation, reduce local excitement, and allay pain: these are the only indications left to the medical man.

Hematoma or Blood-like Tumor of the Uterus.—Dr. Hooper* has described a tumor of this description under the above name. Burns has called it the Spongoid tumor, and Dr. F. H. Ramsbotham, Fungus Hæmatodes of the uterus. It essentially consists of the disease already described in a polypoid state; it is encephaloid disease of the uterus, although more vascular than the one already mentioned. It principally attacks the body of the uterus itself, but it may become polypoid. “It occurs,” says Dr. Hooper, “in the uterus as an organized soft vascular substance, resembling solidified blood, with an appearance here and there of spongy and more flesh-like portions; it is most commonly fungous and lobulated, and therefore commonly called fungus hæmatodes: in the vagina it is mostly polypoid, and very rarely tuberculous.

“When divided, the cut surface of this disease is smooth, like firm coagulated blood, or like the albuminous part of the blood when solidified. Patches of vascularity are here and there distinctly seen, and in many parts the structure is fibrous and spongy. The knife is soiled that cuts this disease, and in most instances humid and paste-like, and somewhat reddish matter oozes from the cut surface when pressed.” Burns says, “This is a firm but soft and elastic tumor, the substance of which bears some resemblance to brain, and contains cysts of different sizes, filled with red serum or blood, or bloody fungus, according to circumstances.” This tumor has a great tendency to affect the neighbouring organs, ulcerating into the bladder and rectum. It is a very rare disease, and when present speedily fatal. It attacks the body of the uterus more than the os, and is thus distinguished from cancer: it is felt as a large elastic tumor above the pubes, and, Burns says, “on the first application of the hand feels like a tense ventral hernia.

* On the Morbid Anatomy of the Uterus.

There may be two or more tumors of unequal size in different parts of the belly, which can be felt to have a connexion with each other, and may be frequently traced to the pubis."

On examination *per rectum*, the uterus is felt to be heavier and larger than natural, lobulated and elastic, and without induration; while we can trace its connexion with the tumor felt previously above the pubis. Ulceration often takes place, a bloody offensive discharge is produced, and there are continual sharp lancinating pains: it quickly destroys the general health, it increases rapidly in bulk, and its termination is usually the production of a bleeding fungus, either in the vagina, bladder, or rectum. Burns states that the tumor may adhere to the parietes of the abdomen; and the skin, after becoming livid, gives way, and a fungus shoots out from the belly.

The treatment is only palliative, the disease being essentially malignant.

Scirrhus of the Os Uteri.—This disease, in a certain part of its progress, produces a tumor of the uterus when situated in the cervix uteri; although generally, when in the womb itself, the malignant matter is only infiltrated into its tissue, and tumefaction is not perceptible. It commences sometimes by slight tubercles scattered upon the vaginal portion of the uterus, which gradually enlarge, and at length ulcerate, and involve the neighbouring structures: at others, the mucous membrane over the neck appears flabby and moveable, while a dense hardness is felt beneath it, (this form does not produce much tumefaction, but commences with ulceration): and lastly, one lip may enlarge to a considerable extent, bulge over, and nearly obliterate the os uteri; ulceration commences, fungoid granulations spring up, which cause bleeding and a highly offensive discharge; and at length the ulceration proceeds to such an extent as to cause death.

The symptoms are those of cancer. The countenance is pale, parchment-like, and depressed; there is lancinating pain through the pelvis, a deep-seated and heavy pain in the back,

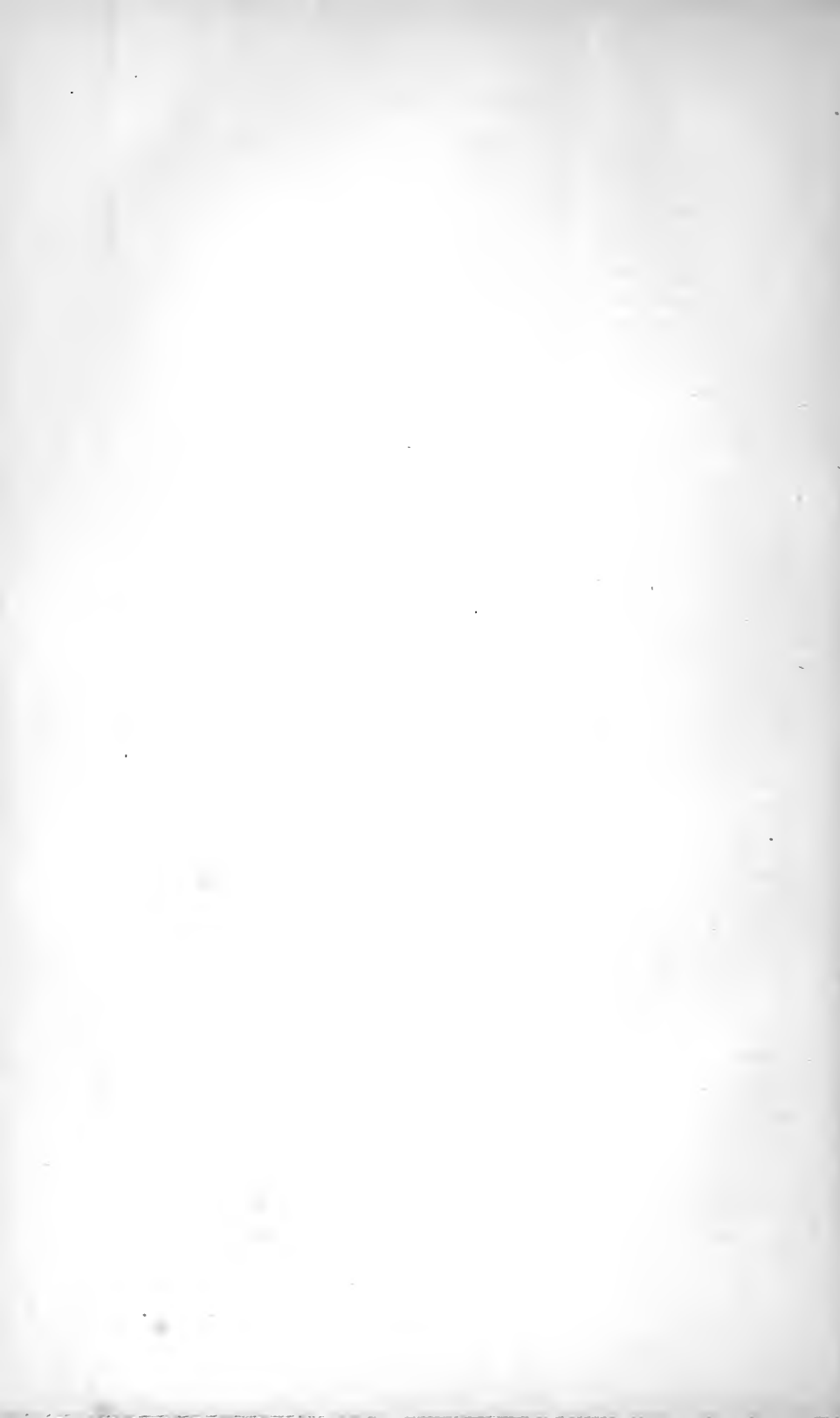
shooting down the thighs and groins; and at first a slight bloody discharge is discovered after coition or examination; in which latter the finger is covered with it, and a mucopurulent one is substituted for it in the intervals. The coloured discharge increases, becomes highly offensive, and soon affects the stomach and general system; dyspepsia arises; there is loss of appetite, great sense of weakness, and diarrhœa usually comes on and carries off the patient.

Here the treatment can be only palliative. When the disease affects the os uteri, and there is only stony hardness without ulceration, it has been recommended to have the neck of the womb removed. I have seen but one case of this kind: the neck of the womb was entirely removed, leaving an open cavity in the womb. After the operation the patient remained in the hospital some long time, until the ulcer caused by the operation had entirely healed; but after her dismissal she shortly had a return of the deep-seated pain in the pelvis, the dragging at the groins, inability to walk far, and many of the same symptoms of which she complained before the operation. M. Lisfranc states, that the success of this operation is very great in his hands; but he can hardly be relied on. It is an operation not much practised by our own surgeons, on account of the liability of the disease to return. Caustic is our only resource when the granulations become too luxuriant; but I have never seen it do much permanent good.

Opiates are constantly necessary to allay the deep-seated and other pains which disturb the rest and break up the constitution. Conium and hyoscyamus are the best; they affect the head less, but frequently are not sufficiently powerful; then opium in some form or other must be had recourse to. The bowels are to be kept gently open; but diarrhœa is to be avoided.

PART II.

DISEASES OF THE OVARY.



CHAPTER I.

DISEASES OF THE OVARY.

ENCYSTED Ovarian Dropsy is the most common form of ovarian disease. It is one which has baffled the skill of the most scientific, and has given rise to an operation hitherto without its parallel. It seems to proceed, for a time, independently of the general system, producing its work of destruction gradually, until at last it bursts upon its victim with alarming rapidity. I have seen a small ovarian cyst lying dormant for a considerable time—so as to throw a doubt upon the diagnosis—progress so rapidly in a fortnight, as to acquire a large size, obstruct the breathing, and severely impede the vital functions.

While observing the treatment of this disease, I have found many statements in books which I could not recognize in actual practice; I therefore determined to collect a sufficient number of cases, in order that I might test their accuracy or fallacy. In this way I have collected 140 cases of ovarian dropsy, which have either come under my own observation, or have been detailed in the medical journals of the day, and have placed the characteristics of the disease in a tabular form. Of course, from so many sources, many of the facts I have wished to ascertain have not been recorded; but at any rate the numbers found are quite sufficient to be authoritative.

It has been said that this disease attacks females indiscriminately, whether they be *single* or *married*. I find, however, from these cases, that the statement is not correct, and that the married are much more liable to the disease than the single, although the latter are frequently affected. Of 136 cases where this fact is noticed, 88 patients were married, 11 were widows,

and only 37 were single. This result agrees with the opinion of Dr. Burns, who says, "that the disease is more apt to affect those who have borne children than the unmarried." And it is opposed to that of Dr. Ashwell, who thinks that "single women are, taking a given number, and comparing them with a given number of married females, most liable to the disease."

TABLE (No. 1.)

Shewing which state (Married or Single) is most liable to Ovarian Dropsy.

No. of Cases.	Name of Journal from whence the Cases are quoted.	Married.	Single.	Widow.
11	Unpublished Cases, observed by myself ..	3	4	4
28	From the Medical Gazette ..	18	9	1
4	" the Edinburgh Med. and Surg. Journal ..	3		1
17	" the Lancet ..	15	2	
14	" the Medico-Chirurgical Review ..	13	1	
5	" the London Med. and Surg. Journal ..	4	1	
2	" Guy's Hospital Reports ..		1	1
12	" Dr. Ashwell's Cases in his late work ..	7	3	2
11	" " " in Guy's Hospital) Report }	8	3	
2	" the Med.-Chirurg. Transactions ..	1	1	
2	" the Dublin Journal ..		2	
25	" Dr. Kilgour's Cases—Lond. and Edinb.) Monthly Journal of Medical Science }	14	9	2
3	" the London Medical Repository ..	2	1	
136		88	37	11

The age at which this disease attacks its victims varies considerably. There are cases—formerly supposed to be numerous—occurring before the age of twenty; and Dr. Ashwell has known one case, which commenced at the early age of fourteen years, contemporaneously with menstruation. But these are rare; for out of 126 patients, only three cases occurred before twenty: but the most common period for its production is when all the generative functions are in full activity, and that is between the ages of twenty and forty. There are 82 cases in that period of the number already specified; but during the next ten years the tendency decreases, and gradually declines to good old age. There are 26 cases between forty and fifty,

TABLE (No. 2.)

Shewing the Age most liable to Ovarian Dropsy.

No. of Cases.	The names of the Journals from which they were taken.	From 15 to 20.	From 20 to 30.	From 30 to 40.	From 40 to 50.	From 50 to 60.	From 60 to 70.	From 70 to 80.	Remarks.
11	Unpublished cases, observed by myself		2	6	1	2			2 not mentioned.
23	From the Medical Gazette.		7	9	4	5	1		
4	Edinburgh Medical and Surgical Journal		1	1	2				
17	The Lancet		5	5	4	2			1 "
14	Med.-Chirurgical Review		6	6	1				1 "
6	London Medical and Surgical Journal		1	3	1				1 "
2	Guy's Hospital Reports	1		1					
2	Med.-Chirurgical Transactions		1		1				
2	Dublin Journal		2						
12	Dr. Ashwell's Cases		4	4	1	2	1		
25	Dr. Kilgour (Lond. and Edinb. Monthly Journal)	1	5	9	4	3	1	2	
3	London Medical Repository	1	1	1					
14	Dr. Macfarlane's Cases in Lancet		2	4	5	3			
140		3	37	45	26	19	3	2	5

TABLE (No. 3.)

Shewing the Duration of Ovarian Dropsy.

No. of Cases	Name of Journals.	From 1 year or under	From 2 years or under	From 3 years or under	From 4 years or under	From 5 years or under	From 6 years or under	From 7 years or under	From 8 years or under	From 9 years or under	From 10 years or under	From 12 years or under	From 16 years or under	From 20 years or under	From 22 years or under	From 25 years or under	From 50 years or under	Not marked.
10	My own cases	4	2	3										1				
27	Medical Gazette	5	7	4	2	1	2				1		1			1	1	2
4	Edinburgh Med. & Surg. Journal		1															3
14	Lancet	5	3	1	1	1	1		1			1						
12	Med.-Chir. Review	5	2	4				1										
6	Guy's Hospital Reports.																	
	—Med.-Chir. Transactions.—Dublin Journal	2	2			1	1											
9	London Med. and Surg. Journal.—London Med. Repository	2	2		1		1	3										
23	Dr. Kilgour's Cases	11	2	4					1						1	1		3
12	Dr. Ashwell's Cases	4	4	1	2	1												
14	Dr. Macfarlane's Cases				4				1	1		4	4					
131		38	25	17	10	4	5	4	3	1	1	5	5	1	1	2	1	8

19 between fifty and sixty, 3 between sixty and seventy, 2 between seventy and eighty, out of 135 patients. (See Table, No. 2.)

The prevailing notion, then, that dropsy of the ovary is met with more frequently in the decline of life, is erroneous. Denman, however, held this opinion, and said that ovarian disease "was more common to women about the time of the final cessation of the menses."

From the preceding paragraph we find that the age at which this disease is most frequent, is between twenty and forty, the prime of life: but what is still more distressing to find is, that although many persons afflicted with it arrive at a good old age, with little or nothing but their bulk to complain of, the duration of the disease in the great majority is very short. By referring to Table No. 3, the reader will find, that out of 131 cases, the disease lasted only one year in 38, only two years in 25: 17 patients survived three years, 10 four years, 3 five years, 5 six years, 4 seven years, 3 eight years, 1 nine years, 1 ten years, 1 eleven years, 5 twelve years, 5 sixteen years, 1 twenty years, 1 twenty-two years, 2 twenty-five years, and 1 thirty years. This fact is of great importance, as far as it shews the great and rapid mortality of the disease under ordinary treatment, and is an argument favourable to those who wish to cure the disease radically. (See Table, No. 3.)

The causes which produce this disease are at present only partially known. Many patients are unaware of any structural disease going on in their system, until they are encumbered by its weight: some perceive an uneasiness in the side, but cannot trace the disease to any cause; while others again attribute it to causes which it is impossible for the disease to have. In the accompanying Table (No. 4) I have been able, from 142 patients, to find in 36 distinct causes assigned by the patients themselves for the origin of the disease, and I have rejected all suspicious ones. From this number 14 cases were connected with the reproductive process, which is certainly the most frequent cause, and goes far to establish the fact I have just stated, that married women are more liable to

this disease. Of these 14 cases, five occurred directly after marriage (which is distinctly stated as a cause by the patients); nine followed parturition, some of which were observed before complete convalescence after labour; in many cases the disease occurred after the first child, in one after the seventh. After marriage and its effects, the next most frequent cause is the sudden suppression of the menstruation; and seven patients of the thirty-six traced their malady distinctly to it. Two cases were traced to abortion, three to exposure to cold, two to falls or blows, one to a violent fit of anger, one to an eruption, and one (in a single woman) to disappointed love. The cause given by Dr. Denman, and supposed to be the most prevalent one, is the cessation of the menses, only occurred twice in thirty-seven patients.

TABLE (No. 4.)

Of the Imputed Causes of Ovarian Dropsy in thirty-six Cases.

No. of Patients.	Name of Journal.	Marriage.	After Labour.	Sudden Suppres. of Menstruation.	Cessation of Menstruation.	Irregular Menstruation.	Disappointed Love.	Abortion.	Exposure to Cold.	Falls or Blows.	A violent fit of Anger.	Appearance of an Eruption.
5	My own cases . . .	1			1		1			1		1
12	Medical Gazette . . .	1	3	4		1			3			
2	Edinb. Med. & Surg. } Journal . . . }				1			1				
8	Lancet	1	4	2						1		
5	Med.-Chirur. Review	2	2	1								
2	Lond. Med. & Surg. } Journal. Lond. }							1			1	
	Med. Repository)											
2	Dr. Ashwell's case . .					2						
36		5	9	7	2	3	1	2	3	2	1	1

From the review of the Table above we draw the conclusion—as far as our numbers can be depended on—that the most frequent cause in the production of this disease is referable to the effects of labour; that the sudden suppression of the menses is next in frequency; the excitement of marriage follows

as a third; and I believe that disappointed affection is one of the most fertile causes in those that are unmarried.

In the majority of cases afflicted with this disease, at their commencement the menstruation is regular, as in health, but becomes scanty as to the discharge and irregular as to time towards its close: but in some cases, even when the tumor has attained an enormous size, and is obstructing the other vital functions, this is untouched.

Pregnancy has often taken place after the formation of this disease, and parturition has been concluded without interfering with it. One case of this kind is related by Dr. Ashwell, where his advice was asked by the parents of a young girl, who had had ovarian disease for two years, about the propriety of marriage: he endeavoured to dissuade her from her purpose, but she did not take his advice, married, and had several children without the disease producing any inconvenience. Many of the married women referred to in the Table No. 4, had children after the full establishment of the disease; and in one case, where the patient was the mother of five children, three were born after the tumor was considerable. The regularity of the menstruation and the power of reproduction is supposed to be carried on by the healthy ovary, but when both are diseased these functions cease.

The growth of the ovarian tumor is sometimes very slow, giving little inconvenience, and only becoming annoying from its bulk. Many patients have lived beyond the fiftieth year of their age; but this is rarely the case, the majority of patients, and especially where the disease is active, being carried off in a few weeks, months, or years. The usual duration of the disease I find to be confined to one or two years, although twenty-six cases of 131 existed more than ten years, and some even thirty years.

It has been stated, and by good authority, that the ovary most liable to be affected by disease is the *left*. Mr. B. Cooper holds this opinion: he says, "Of fifty cases, I find eight had some malignant disease in some other part of the body; and that in

thirteen both ovaries were affected, and that the left ovary was more frequently diseased than the right.”* This result does not correspond with the one obtained from my Table below: for we there find that of ninety-three patients where this point was noticed, (they being taken indiscriminately from the journals), the disease attacked the *right* ovary in fifty cases, and the *left* in only thirty-five, while in eight both were diseased.

TABLE (No. 5.)

Shewing the frequency of Ovarian Disease in the Right, Left, or both Ovaries.

No. of Cases.	Names of Journals from whence taken.	Right.	Left.	Both.
9	Cases of my own	6	1	2
15	From Medical Gazette	6	7	2
3	“ Edinburgh Med. and Surg. Journal . .	3		
11	“ Lancet	3	8	
1	“ Guy’s Hospital Reports		1	
2	“ Medico-Chirurgical Transactions . .		2	
1	“ Dublin Journal		1	
6	“ London Medical and Surgical Journal .	5	1	
22	“ Dr. Kilgour’s Cases	18	4	
9	“ Dr. Ashwell’s cases	5	3	1
14	“ Dr. Mac Farlane’s Case—Lancet . .	4	7	3
93		50	35	8

The Pathology of Ovarian Dropsy.—In considering the pathological anatomy of ovarian disease, there are many circumstances, even at the present time, for which we shall be unable to account. The seat of these tumors is a disputed point; however, it will be sufficient for us to mention the more evident and practical points, that they may be guides in practice, and leave those points at issue to those more capable of entering into them.

I shall divide these remarks into three classes. I. Those that are referable to the different structures which enter into the formation of the cystic tumors of the abdomen. II. To the contents of these cysts. III. To the effects they produce on the various organs contained within the abdomen. These

* *Med.-Chir. Trans.*, vol. xxvii. p. 87.

observations will, I think, include all the practical remarks to be made on this important disease.

I. The first of these divisions will contain a description of (1) the simple cyst attached to the ovary or broad ligaments of the uterus. (2) Enlargement of the graafian vesicles. (3) Cysts unconnected with the ovary, and which are formed in various parts of the abdomen, usually mistaken for ovarian dropsy. And lastly, (4) multilocular cysts.

(1) The simple cyst which is attached to the ovaries or the broad ligaments of the uterus is generally divided into two varieties, although each presents the same characters. The one is attached by a distinct and long pedicle, and the other is sessile. The walls are always thin and semitransparent, containing within their cavity a clear fluid. They are observed at all ages. Dr. Bright has met with them in a child five months old,* and they are seen in old age. The peduncular variety appears to be stationary, never giving rise to much inconvenience; whilst that which is attached, and which generally arises in the broad ligament, may become so large as to fill the cavity of the abdomen, and present all the symptoms of ovarian dropsy, from which it can hardly be distinguished.

One diagnostic mark of these cysts is that, when tapped with the fingers, they produce very distinct fluctuation through thin and rounded walls. They give rise to hardly any constitutional disturbance, and very frequently are cured by tapping or by accidental rupture: when this latter circumstance occurs, you find it followed by a great discharge of fluid either from the bladder or rectum. They are slow in their growth, rarely acquire a great size, more frequently occur in young females, and are very seldom fatal in their results. Dr. Bright says, "I am not sure that I can recal to my memory a single dissection where the simple ovarian cyst has been the cause of death, or has even advanced to such a size as to be the subject of material inconvenience to the patient during life."

* See Dr. Bright's case of pedunculated cyst in a child five months old. *Guy's Hospital Reports*, vol. iii. p. 190.

(2) The enlargement of the graafian vesicle is, in my opinion, a very frequent source of ovarian dropsy. In morbid anatomy we are enabled to trace it from the slight enlargement which accompanies the congestion of the ovary to a much more considerable one, where it is evidently the seat of disease: and I think that some of the large ovarian tumors, when the ovary is lost, or occupies so small a portion of the sac as to be disregarded, can be traced to the enlargement of these vesicles. If the ovary of a woman in the prime of life be cut open and examined, there will be found under its proper covering a number of vesicles, which vary in size from a pin's head to that of a pea; there may be one largely developed, or several of a much smaller size. These then, when they take on a diseased action, may increase so much as to destroy those nearest them: or one may take on a more rapid growth, and cause by its pressure the absorption of the tissue of the ovary, and convert it into a cyst. This enlargement of the cyst, producing absorption of the parenchymatous tissue, is beautifully seen in the Museums of St. Bartholomew and University College.* We find, however, that the enlargement of these vesicles is not confined to their mere projection from the surface of the ovary, but extend to a much greater degree, and their contents are not always so simple as we have described them to be. In the Museum of the Royal College of Surgeons (*Ovary* 11) Mr. Hunter has placed a preparation where the cyst contained fat and hair, which he says presented the appearances of a distended graafian vesicle. In the University College Museum (Prep. 1018) there is a tumor divided into three cysts, apparently dilated graafian vesicles. But they may further increase and attain a very large size. Dr.

* St. Bartholomew's Museum, No. 1, series 26, is a preparation where the ovary is enlarged and divided into three cysts. It is stated in the description of the preparation, that "the ovary is rather larger than natural, with apparently absorption of the parenchymatous structure, and its place occupied by three cysts, which contained a clear fluid."

In the University College Museum (Prep. 1005) is a preparation where numerous graafian vesicles project below the covering of the ovary, of a transparent appearance, and contain a limpid fluid.

Seymour* relates a case of a dilated graafian vesicle which had extended to the epigastrium, and contained a large quantity of coffee-ground fluid.

From the perusal of these cases, then, it must be evident that ovarian dropsy very frequently arises from the disease of the vesicles of De Graaf; and the more the pathology of this disease is studied, the more this will be found to be the case. And this opinion receives additional weight from the fact that the causes of ovarian dropsy, as far as they are known, principally depend on venereal excitement, which chiefly affects the ovarium.

This enlargement generally consists of a simple cyst, but contains very different and peculiar fluids. These are more gelatinous than those in the simple cyst, sometimes they contain solid matter, as fat or hair, and have the thick tenacious appearance of ovarian fluids. It can be distinguished from other cysts by various signs. "As soon as a graafian vesicle," says Dr. Bright, "has acquired a certain size, it is found rising above the pubis, but it is less spherical and less moveable than the simple cyst, and less lobulated than the malignant disease; which circumstance, together with its more moderate growth and the little inconvenience it produces, may afford a clue to our diagnosis, and guard us against an inordinate anxiety for the result. It is probable however that this form of tumor more frequently attains a larger size than the simple cyst, and more frequently affords those instances of sudden disappearance by accidental rupture of the cyst or of gradual decrease when treated by medicine, than any other form of ovarian growth."

(3) Cysts are very frequently developed in other parts of the abdomen, unconnected with the uterine organs, producing the same symptoms, requiring the same treatment, and undergoing the same changes, as those which have their origin in the ovaries.

They may arise from the surface of the liver, in the folds of the omentum, and under the peritoneum. These parts were well illustrated in a case which occurred under Dr. A. T. Thompson, University College Hospital. This case partook of all the symp-

* *On Diseases of the Ovaries.*

toms of ovarian dropsy: the patient was tapped forty-eight times, from which operation 177 gallons of fluid were discharged. The swelling commenced in the form of a tumor in the lower part of the abdomen towards the right side, which gradually extended to the left, and increased to such an extent as to interfere with digestion and respiration. On examination after death, the tumor was found to have arisen in the omentum, close by the pancreas, and was attached by a long thin portion to the uterus, but it was entirely unconnected with the ovaries. There were also at the upper part of the abdominal cavity, attached to the peritoneal surface of the abdominal walls, a number of well-defined cysts containing a clear fluid. These cysts, although quite unconnected with the ovaria, and even under the peritoneum, frequently contain the products of ovarian tumors, viz. fat, hair, bone, &c. I had an opportunity of examining a cystic tumor of the kind, and as its details are not long, I shall describe its appearances here.

Mrs. —, ætat. 50, married, had been labouring under a tumor of the abdomen for twenty-five years: she had had one child previously to its appearance, and three since; she suffered by the disease in nothing but its bulk, and up to the last was able to amuse herself with household duties. The tumor was of an enormous size, disturbing the breathing, and at last producing fatal symptoms. On an examination after death the cavity of the abdomen was almost entirely filled with an enormous tumor, which pushed up the viscera to the right side, and compressed the spleen posteriorly. It was found to have commenced on the left side just under the pancreas, *but below the peritoneum*, so that it rested upon the posterior muscular walling of the abdomen. A narrow pedicle, six inches long, of the size of a quill, connected it with the uterus. It had also formed connexions with the other viscera of the abdomen. The cyst itself contained two pailfuls of a turbid whitish-coloured fluid, with an immense number of balls of hair mixed with fat, in which was calcareous matter: no hairs were observed attached to the cyst, but the balls of hair, fat, and osseous deposit were as large

as the closed hand. On the left side of the cyst was attached to its walls a mass of bone and teeth, &c., strongly resembling an imperfect fœtus. This body was about four inches long, and covered by a membrane resembling the true skin, but closely connected with the sac. It presented at its upper portion an opening divided into two parts, like the imperfect nostrils, immediately under which was a large bone, like the lower jaw-bone filled with teeth; on each side of this part projected a small appendage resembling the ear; below this mass were two long appendages like abortive arms; the right one smaller, and composed of skin, at the end of which were a few hairs. The left one was larger, still more closely resembling the arm, and apparently jointed at the shoulder and elbow; it contained one strong bone like the humerus, and two small bones for the forearm; but the lower end of these terminated the limb. At the lower extremity of the body of this mass was a large projecting bone, also jointed. This approached the form of a femur, at the lower extremity of which was an irregular deposit of bone.

This case during life presented all the appearances of ovarian dropsy; after death it was found to possess masses of hair, and a body analogous to an imperfect fœtus; and yet this cyst is found to be *under* the peritoneum, and consequently entirely detached from the uterine organs. This is one case amongst others strongly demonstrative of the fact, that these productions do not arise from the functions of generation.

(4) Multilocular cyst. The symptoms, on examination, to which this species of cyst gives rise, differ materially from those produced by the varieties we have already noticed. Instead of distinct and clear fluctuation, we find this symptom very obscure, and only so in particular positions: this arises from the tumor being divided into a number of distinct cavities, with walls sufficiently thick and tense to prevent the fluctuation in one cyst affecting the fluid of the other. I have found this to be the case when the sac is removed from the body, (see Case No. 7). The form of the tumor, when it is a multilocular cyst, is irregular, from the projection of secondary and tertiary cysts

into its cavity and beyond its walls. Such portions feel fleshy, and when the hand is applied over them, fluctuation is perceived much less distinctly. The growth of these tumors is much more rapid than the other forms, its effects on the constitution greater, and its final result more sure and certain.

From the first appearance of the disease there is a deep-seated pain felt in the groins; and on examination a hard tumor is felt, which may be mistaken for a hard tumor of the uterus or ovary. This may gradually enlarge, or may become stationary for a time, but then suddenly increases, until it entirely fills the cavity of the abdomen, pressing upon the diaphragm, affecting all the vital functions, producing dyspnœa, vomiting, œdema, and death.

The mode of the formation of these tumors has been the source of great discussion among various pathologists. Some believe this particular structure to be the product of hydatids; others the enlargement of the cavities of the cellular tissue; and lastly, others think that they depend upon the formation of adventitious cysts. This last opinion is the one held by Dr. Hodgkin, which is acknowledged to be the best. I shall just glance at his principal arguments upon the formation of these tumors,* and refer the reader to his work for fuller information. Speaking of the adventitious serous membranes, he says, "that the adventitious serous membranes, like those existing naturally in the body, form complete shut cavities. As far as is in our power to ascertain, they are wholly, or at least with very few exceptions, the result of an entirely new formation; dependent on some anomaly in the function of nutrition, but with respect to the precise nature of which, we are completely in the dark." He goes on to divide serous cysts into two distinct classes; the one where they are simple, and for the most part solitary and containing one simple cavity; the other where the sac possesses the remarkable property of giving origin to new growths having the same character as itself. This latter class will now

* Hodgkin *On the Serous Membrane*.

engage our attention. "In this form," says Dr. Hodgkin, "we observe on the interior surface of the principal cyst elevations, more or less rounded, and of various sizes, projecting into the interior of the cavity, and covered by a membrane which is continuous with the lining of the principal sac. . . . On making an incision into these tumors, we find that they also consist of cysts of a secondary order, filled by a secretion, often serous, but almost as frequently mucous. It is not, however, merely by these secretions that these cysts are filled: on looking more minutely into them, we shall generally find that from one or more points on the interior of these cysts, there grows a cluster of others or tertiary cysts, upon which is reflected the lining membrane of the cyst in which they are contained. Cysts of a secondary order not unfrequently afford as complete specimens of a reflected serous membrane as either the pericardium or tunica vaginalis; the lining membrane of the containing cyst corresponding to the reflected portion, as that covering the contained bunch of cysts does to the close portion. The proportion which the contained cysts bear to the cavity of the membrane reflected over them, is extremely various. Sometimes the fluid, especially where it is of a serous character, merely fills the containing cysts, whilst the bunch of cysts is of a very inconsiderable size. At other times the superior cyst is almost filled with those of an inferior order; in which case we may generally find that the nodules or tuberos elevations which we may have observed on the exterior of the containing cyst, are occasioned by the unequal development of the contained cysts; for those which have grown most rapidly and have obtained the largest size, forcibly dilating that portion of the cyst which is reflected over them, produce a kind of hernia of that part. It sometimes happens that the distention occasioned by the growth of the contained cysts is sufficient not only to distend the even surface of the containing cyst, but actually to produce a rupture, which admits both of the escape of its fluid contents, and of the uncompressed growth of the secondary or tertiary cysts, which took

their origin from their internal surface. The cysts which I have been describing, as found on the internal surface of the first formed cysts, at times pour out a part of their contents into the interior of the large cyst, either in consequence of an extensive rupture produced by the development of a contained order of cysts, as I have before described, or by small apertures, which likewise appear to be the result of distention. In both these cases, but especially in the latter, the open cysts bear a considerable resemblance to mucous follicles on a large scale, and appear to be the principal sources of the very copious and rapidly produced secretion, which is a characteristic feature in many cases of ovarian dropsy. This mucus bears a very close resemblance to that furnished by the glands of Naboth, and it is frequently so viscid that it passes with difficulty through the canula. The membranes of which these cysts, whether of the secondary or tertiary order, are formed, are liable to inflammation. The product of this inflammation, like that which takes place in the serous membranes naturally belonging to the body, may be either of the plastic or unorganizable kind. In the former case it leads to the formation of adhesions between the close portion of the membrane, or that which constitutes the cluster of cysts, and that portion which is reflected over them forming the parietes of the containing cysts. When the product of the inflammation is of the unorganizable kind, we find a secretion more or less puriform in its character. This secretion is sometimes found confined to one or more of the secondary cysts; at other times it finds a way of escape into the interior of the principal cyst, and thus contributes to the variety in the appearance presented by the fluids drawn off in the operation of paracentesis for the relief of ovarian dropsy. But the puriform secretion may proceed from the abrasion of the principal cyst."

This, then, is the theory of the primary formation of multilocular cysts; but there are some peculiarities which come under our notice, and deserve mention.

The size of ovarian tumors varies greatly, from the small pedunculated cyst in a child, to one which will measure four feet

or more in circumference.* No definite extent can be given to these formations, and the simple and complicated equally attain an enormous size; their tendency is to increase, until stopped by some pressure they cannot overcome.

Their growth is usually very rapid. The great majority of cases terminate fatally within two years: but there are some on record, where the disease has lasted twenty or even thirty years. But these are the exceptions, not the rule.

Structure of the walls of the tumor.—These present an apourotic structure, varying greatly in thickness; some are thin, while others are thick and fleshy. Externally they are generally smooth and shining, when undetached; internally they present a variety of appearances. In some the lining membrane is rough and granular,† and is often thrown into folds of different forms, from the diminution of the cyst by tapping or rupture.‡ Sometimes a great portion of the cystic walls are very thick, and have apparently an outer and inner layer, with the intervening space filled with small cells; the whole mass when cut has the appearance of a honeycomb, or a piece of sponge. Some of these cells are distinct, others communicate with those contiguous to them. I have seen the walls of one of these cysts two or three inches in thickness.|| Occasionally the cysts on the internal surface of the principal one are pedunculated,

* See Prep. placed by Mr. Hunter in the Museum of Royal College of Surgeons, England, (*Uterus* 37) of an ovarian cyst, which measures four feet in circumference in one direction, and three feet in another: this is a single cyst, slightly constructed, with an imperfect partition near its middle.

† In Museum of Royal College of Surgeons, England, (Liston 77, *Ovary* 28), "The ovarian cyst is one and a half lines in thickness, containing a gelatinous fluid. Its lining membrane is described by Mr. Liston as rough and coarsely granulated."

‡ See Prep. 2228⁴⁵, Guy's Museum, where "the lining surface presents a uniform appearance of large pentagonal granules, flattened and varying slightly in size, with very dark interstitial lines; these were probably the effects of the diminution of the cavity after the rupture."

|| See Prep. in University College Museum, illustrating this point. "The external membrane is thin, smooth, dense and white, while the internal one is thin, and perforated with a number of foramina communicating with cysts between the two; the space included between them is about an inch and a half. In Guy's Hospital Museum, 2239⁵⁶, these are beautifully injected.

presenting the appearance of the top of a cauliflower, rough, granular, hard, and filled tensely with fluid. These masses may occupy only detached portions of the cyst,* or entirely fill its cavity.† Fibrous tumors may also project from the inner surface of the cyst, and in the Museum of the Royal College of Surgeons, England, (*Ovary* 39) is preserved a horn that was taken from the cavity of one of these bodies. Bony matter is frequently deposited within the walls of these ovarian tumors, either in distinct patches more or less extensive, or it may be deposited in the whole walls of the cyst.||

Hydatids have been found in ovarian cysts; they are distinct globular bodies which support their own life, they are unattached to the inner part of the cyst, and appear to be foreign bodies. The only specimen I have been able to see, is one prepared by Dr. Hooper, in the King's College Museum.§

Ovarian cysts are very freely supplied with blood. Vessels can be seen ramifying over the secondary and tertiary cysts;¶ and the principal cyst is sometimes so vascular as to cause its internal surface to be quite injected. But large blood-vessels are frequently seen running in all directions, both between the various cysts and externally on the tumor, which when present add materially to the danger of paracentesis. I have seen vessels as large as the little finger ramify in all directions over a tumor of this description, and in one case a large vessel ran below the umbi-

* See Prep. St. Bartholemew's Museum, No. 58, series 26.

† See Prep. Guy's Hospital Museum, 2245⁶⁴.

‡ University College Museum, 1442.

|| See Prep. in the Museum of Royal College of Surgeons, England, (*Ovary* 38). In the description of the preparation it is stated, "that it is an ovarian cyst, the walls of which are almost completely ossified: the appearance is that of the bones of the foetal head; in many places they have coalesced together, and narrow processes are seen extending from one to another. The cavity of the cyst is simple, and measures seven inches in diameter."

§ The description of the preparation states, that it presents a portion of an ovarian cyst, which contains a large number of secondary cysts upon its internal surface projecting into its cavity. Also at the bottom of the cavity and vessel containing it are seen a number of distinct cysts, detached, of a round form, and apparently unconnected with the ovarian tumor. These he has named hydatids.

¶ Prep. 2239⁵⁶. Guy's Hospital Museum.

licus between the cyst and abdominal walls. Many are the instances which may now be cited, where the pedicles of ovarian tumors were so freely and largely supplied with blood-vessels, that they have caused death by serious bleeding.

The adhesions these bodies form between neighbouring viscera will be fully considered when speaking of ovariectomy, as it is so intimately connected with that subject.

These cysts may sometimes contain air, which circumstance would in all probability, if unknown, lead to an error in diagnosis; this arises from the communication of the cyst with some part of the intestine; it is therefore an ultimate result, and the existence of ovarian dropsy is usually ascertained before its appearance.

II. *The contents of Ovarian Cysts.*—These may be divided into fluid and solid.

In the first class we find great varieties. In the simple cyst there is generally to be found a clear transparent straw-coloured fluid, which is highly albuminous, coagulating on the application of heat, or by the addition of nitric acid. When such fluid is discharged, and entirely empties the tumor, the probability is that the cyst is simple, and the disease at that time benign; but if the tumor be not emptied you cannot draw such a conclusion, for this fluid may be only the contents of one, of a multilocular cyst. The next secretion most common in this disease is that of a thick, glary, and gelatinous fluid: this varies in consistency from that of a thick cream to almost solid matter, often appearing gelatinous. Frequently a fluid like coffee is discharged from these tumors. I had an opportunity of examining a fluid of this kind, (Martin's case, No. 7.) and found it to contain blood corpuscles in their perfect state, some with the capsule destroyed, and also small detached pieces of the capsule without a defined form. A light brown fluid may be drawn off, and towards the close of the operation distinct white masses present themselves of various forms, preventing the exit of the remaining fluid by stopping up the canula. A fluid of this kind was found to be of specific gravity 1.025, and it became nearly solid on the application of heat or nitric acid, but it

did not coagulate spontaneously. The solid matter under the microscope appeared to consist of granules, and the mass appeared to be fibrous. There were also similar globules contained in the fluid, with numerous blood disks. Pus is often effused into these sacs after an inflammatory attack, and large quantities are discharged. Sometimes you meet with a fluid of an olive green colour, containing a number of shining crystals; these are found by the microscope to be cholesterine.

Dr. Rees has given an analysis of five specimens of fluid taken from ovarian dropsies, and has compared them with the constitution of the blood, and finds that there is an excess of water and extractives, but a deficiency of albumen. He says, "It will be seen, by comparing these analyses with that of the serum of the blood, that in every specimen there is a considerable excess of water and extractives, and a deficiency of albumen. As all these fluids were of that mucoid tenacious character, so well known to those who are in the habit of examining the cyst of ovarian dropsies, I am inclined to conclude that this peculiarity of appearance is attributable to the presence of a large portion of extractives, particularly the albumen combined with soda, aqueous extracts insoluble in alcohol, which opinion is confirmed by the experiments of Dr. Babington, who has succeeded in forming a mucoid fluid by the addition of alkalies to albuminous secretions." In the preparation the salts are in excess in proportion to the solid matter. "My reason," says Dr. Rees, "for regarding the salts in relation to the solid matter is, that the peculiar mucous character of the liquors is owing to the nature of the solid ingredient, and quite independent of any peculiar portion of water, as might at first be supposed. Again, the alkaline salts obtained from the ovarian fluids differ from those of the blood in not containing any phosphate which can be recognized even as a trace in the quantity of solid matter obtained from 200 grains: experiments made on large quantities for the express purpose of detecting an alkaline phosphate, shewed a trace only."

TABLE (No. 6.)

Examination of four Fluids drawn from secondary Cysts of an Ovarian Tumor, and of one (No. 5) probably from an Ovarian Cyst. By Dr. REES.

	No. 1. Clear, light straw-coloured. Alkaline. Sp.G. 1017.	No. 2. Dark-coloured muddy, neutral. Sp.G. 1017.	No. 3. Approaching in character to white of egg. Alkaline.	No. 4. Clear straw-coloured, containing flakes of a pearly scaly-looking substance.	No. 5. Alkaline, very tenacious. Sp.G. 1009.	Analysis of the serum of the blood for com- parison.
Water ..	190.9	190.70	195.2	187.7	195.32	181.2
Albumen, with traces of fatty matter ..	4.1	4.25	1.8	7.6	0.54	16.5
Albumen existing in so- lution as Albuminate of Soda ..	3.7	3.62	1.1	4.0	*2.22	0.4
Alkaline Chloride and Sulphate with Carbo- nate of Soda, from de- composed Albuminate	0.8	0.78	1.2		†1.08	1.6‡
Extractive, soluble in water and alcohol ..	0.4	0.45	0.5	0.5	0.54	0.3
Chloride of Sodium with Carbonate, from de- composed lactate of Alcoholic Extract ..	0.1	0.20	0.2	0.2	0.30	
	200	200	200	200	200	200

From this table, then, we find that the fluids taken from ovarian cysts, when compared with the blood, contain less albumen than that fluid, although more than it in combination with soda, and the peculiar mucoid character of such fluids depends upon an excess of extractives, particularly albumen contained with soda.

All these varieties of fluid may be contained in one ovarian tumor. At first a pale yellow fluid may be evacuated, followed by a black coloured and tenacious one, succeeded again by pus. This depends upon the bursting of secondary and tertiary cysts

* This albumen existed only in part as albuminate of soda.

† This was from decomposed lactate, with traces of phosphate.

‡ The whole of the alkaline salts are estimated together in the analysis of serum, as indicated by the line.

into the principal one, or inflammatory action with ulceration of it. After death we frequently find these various productions contained in neighbouring cysts. Mr. Howard* describes a tumor of the sort: he says, "The tumor was composed of an immense number of cysts of all sizes, their contents were very various, in some the matter was colourless serum, in others it was yellow, in others as dark as coffee, and in others it was bloody. The consistence of these fluids was as various as their colour."

Dr. Bostock has endeavoured to account for the variety of the fluids obtained at different times from ovarian dropsies, by supposing that the capillaries take on a different action according to local circumstances: he says, "If we may be permitted to regard the various substances mentioned above, which are the produce of the ovarium, as proceeding from the same secreting surface in different states of action, we arrive at the conclusion that according to the nature or degree of this action the same organs may generate the common dropsical fluid, which essentially consists of albumen, a proper mucous fluid, and a perfect adipose matter, together with various shades and combinations of them. . . . Again, in the case of a surface, which in its healthy state secretes an albuminous fluid, we find this fluid to contain the same saline ingredients as the blood, and the same quantity of uncoagulated matter a variable proportion of albumen, but always less than in the serum, while the fibrine is totally absent. Here then the action of the capillaries is simply to separate from the blood a part of its albumen and the whole of its fibrine, a change which we easily suppose is effected merely by a fluid passing through a tube of a certain size and with a certain rapidity, so that the more completely soluble parts alone are suffered to pass, while those that are less soluble are detained. . . . Let us now suppose, that by some cause the capillaries have their action so far altered, that their size is increased, that their contractions are more powerful, and that the temperature of the

* Medical Gazette, 1842.

organ is raised. We might conceive, under these circumstances, which may be considered to constitute a certain state of inflammation, that the albumen will be discharged in great quantity, and may also be partially coagulated, thus forming a mucous secretion. And we may conjecture, that in a higher degree of the inflammatory state, when the arteries are more distended and act with more force, and where at the same time the temperature is still further increased, a large portion of albumen will be discharged in a more coagulated form, together, perhaps, with a quantity of fibrine, thus producing the various kinds of exudations which are occasionally observed under these circumstances.

2. *A Description of the solid Substances found in the Ovary.*
—Fat, hair, bone, and teeth, are the solid substances most commonly found in cystic tumors of the ovary. Formerly these productions were always attributed to conception, but subsequent observations have distinctly proved that the generative faculties have nothing to do with their formation. And the facts produced in proof of this statement arise, 1st, From the knowledge that these productions have been observed in virgins and those too young for copulation. 2nd, They have been discovered in other parts of the body unconnected with the uterus or its appendages. And 3rd, They have been found in the male species.* Dr. Baillie has furnished us proof of the first fact, and has related a case where fat and hair were found in the ovaria of a girl thirteen years of age. He says, “A girl about thirteen years old was brought into the dissecting room, and the blood-vessels were injected. The right ovarium was swelled to a size larger than a hen’s egg. It was filled with a peculiar sort of fat and hair; at one place there were two long excrescences from the capsule containing this fat, which a good deal resembled teeth. The uterus was as small as at birth, and when opened, exhibited the common appearances. The girl had an entire hymen, and the pubis was without hair. Such cases have been considered as impregnations, but in this case the state of the

* Baillie’s *Morbid Anatomy*.

uterus, the age, and the hymen, rendered such a supposition groundless.”*

2ndly, These substances are found in tumors altogether unconnected with the generative organs. I have already referred to a case where the cyst contained in its walls a body resembling an abortive fœtus, which was entirely unconnected with the ovaries, and was situated *under the peritoneum*, and lying on the muscular tissue of the posterior walls of the abdomen. In that case there were two large portions of bone regularly set with teeth, corresponding to and representing two portions of the lower jaw, and other large bones were seen. The cyst which contained these bones, and from which they grew, was of enormous size, and contained large quantities of fat mixed with hair. These were rolled up into globular masses of the size of the fist, the cavity of the cyst appeared to be filled with them and a dirty white fluid. The disease was of thirty years’ standing. The uterus and ovaries were healthy, and unconnected with the tumor.

Tumors containing these substances are frequently found in other cavities besides the abdomen. Dr. Gordon, of the London Hospital, has met with a tumor in the anterior mediastrium, containing an osseous structure, resembling a portion of the superior maxillary bone, some hair and teeth. And Sir B. Brodie has found some well-formed teeth in the bladder.

3rd, These formations have also been found in animals and the male sex.

Professor Coleman has described a tumor found in the abdomen of a gelding, in which two molar teeth of the horse, possessing the regular arrangement of bony matter and enamel, were attached to the interior of the cyst, also one incisor attached

* See Preparation, Hunter, 522, (*Uterus* 14), in the Museum of Royal College of Surgeons, England, where an ovary has been taken from a virgin eighteen years old, containing fat and brown hair, “and on one side of the cyst there was a firm substance, upon which several large hairs and an imperfect tooth is implanted.”

Sir B. Brodie has given a preparation of a portion of bone taken from an ovarian cyst, resembling the jaw, from a virgin twenty-seven years old.

to a portion of bone resembling the jaw, and a quantity of fat and some black hair in a separate cyst.

Dr. F. H. Ramsbotham* also states in his lectures, that Ruysch possessed a tumor in his collection which consisted of teeth and hair that had been taken after death from a cyst found in the coats of a man's stomach, besides a jaw with well-formed teeth in the bladder. Duvernay saw a tumor extirpated from the scrotum, containing fleshy matter and bones. Dupuytren related to the Medical Society of Paris the history of a tumor found in the abdomen of a boy, containing a mass of hair and a foetus nearly ossified. And in the first volume of *Med.-Chir. Transactions*, p. 236, is a description, by Mr. George W. Young, of a foetus distinctly recognized in a cyst in the abdomen of a boy (John Hare) about a year and a half old.

These cases are quite sufficient to prove that the production of bone, teeth, hair, fat, &c., have nothing to do with the functions of the generative system of the female in whom they are found; but that they are either the production of the cyst itself, or that such products are the consequence of the confusion of two separate ova at the time of impregnation. No doubt this latter cause may account for many of these productions, but I think sufficient stress has not been laid on the secreting powers of the cyst itself. For instance, we have already seen that it is no uncommon thing for the cyst to secrete bone: we have quoted instances where the sac itself has been converted into bone, and we have seen bone discharged from an ovarian tumor during life.

Besides bone, hair also can be produced by the cyst itself. In the Museum of St. Bartholomew's Hospital there is an ovarian sac, the inner surface of which has taken on a peculiar action, and has produced a membrane like the scalp, which is covered with hairs, they having a distinct bulb, and growing in the same manner as on the external surface of the body.† Dr. Carswell

* Lancet, 1828-29.

† No. 29, series 26, St. Bartholomew's Museum. "This preparation is a portion of the cyst of an ovary exhibiting the growth of an adipose tumor from the internal surface. The exterior of this tumor is formed by a thick membrane closely resembling skin; from this membrane and from the cyst itself numerous hairs have originated; these hairs possess bulbs."

also gives a beautiful drawing of an ovarian cyst, from a portion of which grew a considerable number of long hairs nearly a foot in length; there were some hairs detached, and had formed themselves into balls of various sizes. No hairs grew from any other portion of the cyst, and they possessed bulbs.

We thus find that the sac contains the power, not only of producing hair, and that hair possessing bulbs like the natural hair of the body, but also bone is produced within the cyst itself, which becomes detached like the hair, and is found in variously shaped masses in its cavity.

Dr. Ashwell supposes that these products have their origin from disappointed sexual appetite, the power of production being present in the female without receiving the stimulus of the male, and consequently she throws off an imperfect production. But if we for one moment consider that these products are found in all parts of the body, and in those parts entirely unconnected with the uterine functions, this supposed cause must be erroneous.

The hairs found in these cysts vary materially in colour, and do not assume that of the person in whom they are produced; they are principally slightly red or black, usually possess a bulb, and have all the characters of healthy hair.

They grow from the inner surface of the cyst, which is changed in its character and has the appearance of skin. In Dr. Carswell's cases the portion of the cyst from whence the hairs grew was like the scalp.*

III. *Effects produced on the Viscera by Ovarian Cysts.*—In the early stages these tumors more particularly affect by pressure the organs contained within the pelvis, causing retention of urine and constipation, producing also various changes in the position of the uterus. At a later stage the results of pressure are felt in a more serious degree, the stomach is

* Royal College of Surgeons' Museum, England, (*Ovary* 36). This preparation was presented by Sir B. Brodie: he says, "that the interior of the compartment of the cyst which contained the hair had the general aspect of skin, with apertures like those of hair follicles."

affected, the chest is unable to perform its functions, the kidneys are pressed upon, suppression of urine takes place, and sometimes by the bursting of the sac the peritoneum becomes inflamed. There is great tendency in these tumors to produce ulceration in neighbouring organs. The colon throughout its extent is subject to its ravages ; many cases are recorded to illustrate this fact. The bladder has been perforated by the pressure of these tumors. Dr. O. Heming relates a case in the translation of M. Boivin's and Duges' work, " where the bladder was opened by ulceration, and for a long time allowed hair to pass with the urine ; at last a body was abstracted from the bladder as large as a hen's egg, presenting, at one of its extremities, a shred of skin containing hairs and a bone, in which was partially fixed a kind of tooth resembling a small molar. The communication of the cyst with the bladder was ascertained by the finger passed into the urethra. The person recovered."

These tumors, when small and existing with pregnancy, give great trouble in parturition, and frequently endanger both the life of the mother and child.

Symptoms of Ovarian Dropsy.—We may mention, in passing, that the term ovarian dropsy is applied to almost all cystic tumors, whether they arise in the ovary itself, or its broad ligament, in the omentum, or in the dilatation of the fallopian tube. They each produce nearly or all the same symptoms, and therefore are only treated separately in the pathological remarks on this disease.

I shall refer the symptoms of this disease to two periods of its progress, the one set occurring while the tumor occupies the pelvis, the other after it has ascended into the abdominal cavity.

The first symptoms usually brought under the notice of the patient, are a deep-seated pain in one or both groins, with great uneasiness ; a bearing down and sense of weight in the pelvis ; and a peculiar fulness in the lower part of the abdomen. More particular enquiry elicits that there is a throbbing pain almost constantly felt in the fundament ; that pain is produced on passing fœculent matter ; and that there is also a pain and *burning*

sensation just under the hip of the affected side: most usually the limb on that side becomes numb; a partial loss of motion may occur; pricking and shooting pains are felt, and œdema may take place. The veins of this limb become large, and piles are often complained of, producing occasional hæmorrhages. The catamenia are usually regular, but may become more profuse, and at this time may contain white exudations. There is also pain on coition.

On examination *per vaginam* at this stage you will find the uterus healthy and in its natural position, but by placing your finger posteriorly and at the upper portion of the vagina, you will find that the patient will complain of pain, and on further examination a tumefaction will be found. This is more distinctly felt, and the pain is more acute, when the examination is made *per rectum*.*

Constipation is a most frequent symptom of this disease. The pressure of the enlarged ovary on the rectum, and the fear of pain on the action of the bowels, soon produces accumulation of fæces, which causes distention of the abdomen, not exactly from the quantity of fæcal matter retained as from the flatulency produced; so that in the early states of ovarian disease a large and flatulent abdomen is usually present, and the patient always complains of distention. The functions of the bladder become interfered with, there is frequent desire to make water, and sometimes inability to pass it.

At the commencement of the disease constitutional symptoms often arise which assimilate those of pregnancy. The stomach frequently becomes affected in the morning, there is occasional syncope, the breasts become painful, and it is said that the one on the affected side is more so than the other. These symptoms

* To the fact of an *inflamed* ovarium being felt through the rectum by the finger, and that without difficulty, I can myself testify, although it has been doubted by an eminent professor of midwifery. I have carefully watched the changes that have occurred during the cure of these inflammations, and have distinctly traced the increase and decrease of the diseased organ through the rectum. In one case I, by means of the sound, elevated the uterus, and placed my finger between it and the diseased organ.

are all worse at the menstrual period, which, in the majority of cases, is but little disturbed, and, until the latter stages, is regular, unless the cause of the disease arises from its suppression. At this time, on examination *per vaginam*, a tumor can be felt bulging into the vagina, most usually situated between it and the rectum.

When the tumor rises into the abdomen, most of the symptoms we have spoken of are alleviated, but others arise. When the tumor is in the pelvis it may remain stationary, and give little or no trouble to the patient, and is only ascertained when it presents an obstacle to parturition. But, however, it most usually continues, sometimes gradually, at others very rapidly, to increase, and its symptoms at this period are referable to pressure.

The bladder now suffers most, its cavity is drawn up, reduced, and unable to be distended, so that there is frequent desire to pass water, while small quantities are only ejected. If the tumor occupies the entire abdominal cavity, suppression of urine may arise from the pressure which the cyst exerts on the kidneys, diuretics fail to increase the quantity of urine, while it has been shown that paracentesis has produced an instantaneous flow with great relief to the patient. This fact is well illustrated by a case given by Burns, of Madame de Rosney, "who in the space of four years was tapped twenty-eight times; for seven days after each puncture she made water freely, and in sufficient quantity; the appetite was good, and all the functions well performed; but in proportion as the tumor increased, the urine, in spite of diuretics, diminished, and at last came only in drops." When the tumor first occupies the abdominal cavity there is great tympanitis, so much so as to obscure frequently the disease; we are unable to feel the tumor, and fluctuation cannot be perceived, but it gradually increases, displaces the flatulent intestines, and occupies the greater part of the anterior portion of the cavity of the abdomen, causing pressure upon all its organs, especially the stomach, giving rise to frequent sickness after taking food. Œdema occurs in the lower extremities from pressure on the veins of the abdomen; dyspnœa comes on from

its encroachment on the diaphragm, and the patients gradually sink from exhaustion.

On the examination of the abdomen when the patient is affected with ovarian dropsy, you may find a circumscribed tumor in one or both groins, moveable under the integuments, not very painful on pressure, and traceable into the pelvis. There may, or may not, be sensible fluctuation. As the tumor increases, it rises above the intestines, and stretches the walls of the abdomen, which have a tense and shiny appearance, with enlarged veins on their surface. When the patient is lying on her back, the tumor is more apparent on one side than the other. The abdomen, however, retains its prominent shape, is not flattened at its most prominent part, and this appearance does not vary whatever position the patient may assume. The tumor may extend upwards to such a degree as to push upwards and backwards the ensiform cartilage so as to nearly dislocate it.

Fluctuation is frequently observed distinctly throughout the whole tumor, which indicates that the fluid is contained in one cavity, while sometimes there are only partial fluctuations, bringing us to the conclusion that it is contained in many. Where there are many cysts they are divided by distinct septa, which are, in some cases, too strong to transmit the fluctuation of the contents of one cyst to those of another. This I observed in a *post-mortem* examination, where there was a cyst containing two cavities, and I was unable to feel fluctuation when I allowed the septum to intervene, although it was quite distinct in the individual sacs. Again, fluctuation may not be perceived so distinctly when any portion of a solid mass intervenes between the fluid and the hand. The mode of testing the fact of solid matter occupying any portion of the cyst, is by placing the hand on one side of the tumor, and tapping it sharply with the other at a distinctly opposite point, perceiving the force of the fluctuation: you then reverse the operation, and if the fluctuation is as distinct as in the former one, you may say that there is no solid matter between those two points; but if it is less distinct or distant, that solid matter does exist.

One may be much deceived by the character of the fluctuation, and it becomes a matter of great tact to draw any inferences from it. In the first place, a cyst may exist where the fluctuation is very distinct in parts, extending to the circumference of the tumor, and yet may be composed of numerous small cysts. A case of this sort was seen by many medical men, well conversant with the disease, who decided that there was a very large cyst containing solid matter at various points of its inner surface, but the distinct fluctuation was so marked that they supposed the original cyst a very large one. This patient was operated on, and we found that the whole tumor was composed of an immense number of small cysts, and nearly all filled with a thick fluid. Again, fluctuation may be very distinct, and yet the fluid be thick and contained in numerous small sacs. For instance, in Case No. 6, the fluctuation was so distinct that all who examined it decided that it was unilocular, and I headed it so on taking the particulars. She was tapped, but the operator was obliged to desist, for no fluid escaped, although there was a large trocar used. She died, and the tumor was found to be composed of a number of small cells filled with a thick and glary fluid.

Movements in the abdomen are frequently felt by patients labouring under encysted dropsy. These sensations are variously described: some observe only a beating in the abdomen, others motions like those of a child; but they are all greatly influenced by the mind, and become more frequent the more the attention is directed to them. They usually depend upon the pulsations of the aorta on the distended cyst.

Percussion gives good evidence in ovarian dropsy. There is always dulness on percussion from the pubis upwards to the circumference of the tumor. This is caused by the tumor being placed before the intestines, so that their resonant sound cannot be elicited through it; but if you apply the same means of diagnosis posteriorly in the lumbar regions when the patient is lying on her back, or even around the circumference of the tumor, you obtain a resonant sound, because the intestines occupy

those spaces. This is one of the chief distinguishing marks between this disease and ascites; for in the latter, when the patient is lying on her back, the fluid gravitates posteriorly, and therefore gives a dull sound on percussion in the lumbar regions; whereas the intestines being free, float on the surface of the fluid, and produce a resonance anteriorly. On placing the hand gently on the abdomen, and carefully moving its parietes on the tumor, you may sometimes feel a crepitus, or a sensation like that produced by the creaking of new leather. This is perceived only when adhesions exist between the tumor and walls of the abdomen, they being long enough to allow of partial motion. But, however, adhesions often exist where no crepitus can be felt. This physical sign was first pointed out by Dr. Bright, who described the case in which it occurred in Guy's Hospital Reports. This peculiar crepitation is sometimes very loud and prominent, and in Woolner's case, No. 6, I could not only distinctly detect it with the fingers, but, on certain movements of the body, could as distinctly hear it. In her case, the sensation given to the fingers was that of an emphysematous character, crackling under the touch; although no emphysema existed, nor was it perceptible unless the walls of the abdomen were gently moved upon those of the sac. The patient continually heard this peculiar sound, and was the first to direct my attention to it. In other parts of the tumor the true leather creek sound was very audible, but both these sounds were confined to different spaces of the tumor.

The tumor itself is not always found to be smooth in all its parts, but frequently portions project and feel hard and solid to the touch; and if firm pressure be used in different parts of the tumor, hard portions can be ascertained, although they do not project. "In this way, if the abdomen be not very tense," says Dr. Bright, "we discover considerable masses of unyielding matter, partaking of the general rounded feel of the whole disease, but conveying the impression of more or less flattened spherical bodies, attached to the inside of the fluctuating tumor; and that these bodies are sometimes so large, and sometimes

so variously placed, as to suggest to the inexperienced observer that the liver, the spleen, or the kidneys, are enlarged, or in some way involved in the disease.

Examination per Vaginam.—In this stage of the disease, you frequently find that the vagina is much elongated, giving a funnel shaped character to the cavity; the os uteri is found to be displaced, usually drawn upwards, to the same side as the ovarian disease, and, as it were, twisted upon itself. The uterus is found to be moveable and light, and unconnected with the surrounding structures; it can be thrown upon the rectum by the uterine sound; and if the tumor be free, it can be elevated above the pubis. Sometimes, however, the uterus is so pressed between the tumor and pubis that it becomes fixed, so that it cannot be moved, and appears connected to the tumor.

The ovarian tumor may project into the vagina, and press together its walls, so that it is almost impossible to introduce the finger, or find the os uteri: in one case of this sort, which came under my notice, the os uteri was carried quite above the pubis, and with the utmost difficulty could be reached. In some cases the uterus lies across the vagina, with its fundus on the rectum and below the sac, so that the finger, immediately it enters the vagina, touches the posterior wall of the uterus: these malpositions can be distinctly ascertained by the uterine sound.

The Diagnosis of Ovarian Cystic Tumors.—In no disease is a correct diagnosis of such vital importance as in ovarian dropsy; upon it depends the chance of cure or the entire abandonment of the patient. Its difficulty vies with its importance, and to prove this assertion, it is only necessary to state that six patients have had the abdominal walls opened, and no tumor was discovered. We shall therefore, as far as we are able, lay before you the diagnostic character of this disease, and endeavour to establish certain signs, by which it may be distinguished from other abdominal enlargements.

When the disease is situated in the pelvis, and before it has

risen into the cavity of the abdomen, it may be confounded with two diseases, *retroversion* and *retroflexion* of the uterus.

1. The ovary is generally felt, in its first stage of disease, between the rectum and vagina; in some cases fluctuation may be observed, but in others the symptoms are more obscure, and may be mistaken for retroversion of the womb. When we examine, *per vaginam*, a patient labouring under the first stage of ovarian dropsy, we find a circumscribed tumor at the posterior portion of the vagina, between that canal and the rectum, painful on pressure, and very much resembling the fundus of the uterus; there may be retention of urine and constipation. But the examination of the uterus will decide the question; the os uteri will be found in its proper position, looking backwards, the body of the uterus forwards, and moveable, as shewn by the uterine sound, and the local symptoms much less severe than if actual retroversion had occurred; whereas in retroversion the os uteri is thrown forcibly forwards and upwards, and the womb is fixed and very painful.

2. *Retroflexion of the womb* is more likely to simulate ovarian dropsy. This has been particularly described by Dr. Rigby, and is an affection of the uterus where the fundus uteri alone is thrown back upon itself, like a common retort, the os being in its natural position, with a tumor felt directly behind it, between the rectum and vagina. This disease may be distinctly recognized by the introduction of the uterine sound: we shall find that its concavity will be obliged to be passed backwards, following the course of the cavity of the womb; and its point will be felt, through the tumor, by the finger in the vagina. By careful manipulation, the fundus can be restored to its natural position, and the tumor consequently disappears. None of these symptoms will be found if the ovarium is diseased.

When the tumor occupies the abdomen, it is to be distinguished—

1. *From ascites*.—If we examine a patient labouring under ovarian dropsy, we find her generally in the enjoyment of

good health, complaining of nothing but the distention of the abdomen, which she states has been gradual in its increase, and had its origin in one or both inguinal regions. The abdomen has a tense appearance, and a circumscribed fulness can be perceived. Sometimes, however, the tumor occupies and distends the abdomen to such an extent, that this characteristic is not distinguishable. On looking at the abdomen attentively, you observe that it bulges more to one side than the other, that it has a circumscribed aspect, and that the veins of the parietes are very much distended. When the stethoscope is applied, no borborigmi are heard, or at any rate very slightly, and at a considerable distance, while percussion elicits a *dull* sound anteriorly from the pubis to the whole extent of the tumor; but at the upper portion of the tumor and in the lumbar regions the clear sound of the intestines is found. Fluctuation is often obscure, but frequently more distinct in some parts than in others, and is not observed in the lumbar regions. The dulness on percussion and fluctuation is always present in the *same part of the abdomen*, whatever position the patient may assume; they are both found anteriorly. The tumor usually is smooth on its surface, but occasionally irregularities are observed at different points of the abdomen, which appear like projections; these may be so large as to be mistaken for enlargements of the viscera when in their position; but a careful examination will distinguish these as parts of the cyst; and their origin, circumscribed character, and position will distinguish them from other diseases. The vagina has a funnel-shaped character, and is usually elongated; the os uteri is tilted to the side on which the disease is situated; but sometimes the tumor bulges into this canal, and fluctuation can be felt there.

On the contrary, in ascites the patient has generally a diseased aspect, the abdomen is not tense, and its greatest distention is below, when in the erect posture; on lying down the abdomen becomes flattened, and change of posture produces change of form, the greatest protuberance being to the

side on which the patient lies. Borborigmi can be distinctly heard with the stethoscope, and when on the supine position, anteriorly, a clear resonant sound is elicited on percussion, produced by the intestines floating on the top of the fluid contained in the cavity, with dulness in the lumbar regions from the fluid descending to this part. In the erect posture, fluctuation is most distinct; anteriorly in the supine, in the lumbar regions; œdematous effusions are found in other parts of the body, as in the legs, and the veins of the abdomen do not attain so large a size as in ovarian dropsy.

Thus then, from the fixed character of an ovarian tumor, from dulness on percussion, anteriorly, not being changed by change of posture, from the resonance in the lumbar regions being constant, and from the tension of the abdominal walls being invariable, we can distinguish an ovarian dropsy from ascites. When, however, ascitic fluid is present with an ovarian tumor, as it frequently is, the signs of the two diseases become complicated: you then will observe, that on *slight* percussion you can produce a superficial fluctuation, seen to the eye, and apparently near to the surface; but if the fingers be suddenly applied to the abdominal walls they appear to displace something, and come at once in contact with a hard substance, producing fluctuation, evidently different to the former one. And here again percussion will be called into requisition, and if dulness still exist, a tumor also occupies the cavity of the abdomen with an ascitic fluid.

2. *From pregnancy.*—Ovarian dropsy may be accompanied by many of the symptoms of pregnancy. The breasts may become enlarged, and a thin secretion take place; the mammæ may become tense and painful, more particularly the one on the affected side. Movements are also frequently observed in the abdomen resembling those of a fœtus, and the patient may consider herself pregnant. But ovarian dropsy may be distinguished from this natural state, by the disease commencing on one side—but this cannot be entirely relied on, because the disease is frequently not perceived until it occupies the medium

space; by the regularity of the menstrual discharge; by the absence of the areola and follicles, and especially of the tumid state of the nipple observed in pregnancy; and by examination, which detects the uterus small, moveable, and of its natural form: no ballottement can be perceived, and the os and cervix are of their natural length and consistency. The "bruit" of the enlarged vessels of an ovarian tumor has been mistaken for the placental murmur, but there is no foetal pulsation. We must recollect, however, that pregnancy may coexist with ovarian dropsy, and materially obscure the diagnosis. Many women have conceived and brought forth children, after they had been subject to ovarian dropsy. I should rely on the tumid state of the nipple, the areola, and follicles, and on the changes which had taken place at the os and cervix of the womb, in detecting its presence. These are the only symptoms we can depend on during the first months of pregnancy; at a later period, however, the placental murmur and foetal heart will be heard.

3. *From cystic tumors of the abdomen.*—It is exceedingly difficult to distinguish these tumors from ovarian dropsy; they assume all the characteristics of this latter disease: we may be assisted when they are small, and if we ascertain their seat of origin, but when large it is impossible to distinguish them by the ordinary means of diagnosis. The uterine sound is the only instrument by which we can distinguish such a tumor from ovarian dropsy, and that not by positive information, but by negative signs.

"I have found," says Dr. Simpson,* "however, advantage from the negative information given in other ways by the bougie, even when the tumor was abdominal in its seat. An example will best illustrate my meaning. In a case sent to Edinburgh a few months ago, for the purpose of having some opinion given in regard to its nature, an immense abdominal swelling that was present, and which had been supposed by some medical gentlemen who had seen the patient to be ovarian,

* *Lond. and Edinb. Monthly Journal* for July 1843, p. 660.

was shewn not to be so by sufficient evidence of the following nature. The uterus was displaced obliquely backwards, and the fundus of the bladder was displaced to the right iliac region by the abdominal enlargement; circumstances which were easily ascertained by introducing the uterine sound into the cavities of both these organs. Further, the uterus, although displaced, was quite moveable, and when its fundus was turned by the bougie towards the site of either ovary, and the abdominal tumor lifted up as high as possible towards the epigastrium, no obstruction was met with: nor was this great change upwards in the direction of the tumor found to produce any dragging effects upon the uterus, as held by the bougie, or its connections; effects which, unless under the improbable supposition of a pedicle several inches long, would have inevitably occurred if the diseased mass had originated on, or was connected with, the ovaries or uterine appendages. So far the evidence was negative, but so far important; I may add, that other characters of a more positive nature—the history, the particular form, and consistence of the tumor, its position in point of the substance as ascertained by percussion, &c.—seemed to shew, seeing that it was not ovarian, to be in all probability one of those hydatigenous tumors that sometimes form in the tissue of the omentum, and whose physical symptoms during life in many respects correspond with those of ovarian dropsy.”

Cystic tumors in the substance of the uterus, may also be mistaken for ovarian dropsy. There is a preparation in the Museum of the Royal College of Surgeons, England, where this actually took place. (*Home* 980, *Uterus* 23.) It displays a portion of the uterus, in which a large encysted tumor had formed. “The patient had been twice tapped,” and the cyst emptied. The case was supposed to have been ovarian dropsy during life.

4. *Tumors of the uterus may be mistaken for ovarian dropsy.*—These, when they assume the pedunculated form, are very likely to be mistaken for the disease, and even a tumor of the uterus, which was fixed to the organ, has been operated on for ovarian disease by Messrs. Heath, Otter, Atlee, &c. The

distinguishing signs of these tumors have been fully detailed elsewhere; but we may mention, that when the uterus contains these bodies, its weight is increased, and the tumor is found to be connected with its structure. For if we find that the uterine sound passes as it were into the morbid mass, if the tumor and uterus cannot be separated, and every elevation or depression of the tumor in the abdomen produces the same movements in the sound, we must then conclude that the tumor is uterine. But if we find the uterus small and moveable, and the sound passes anteriorly to the tumor, that it can be separated from it, and when thrown into the rectum it appears healthy, then we may very confidently state the tumor to be ovarian.

Again, ovarian dropsy may be mistaken for a fibrous tumor. This may occur in the multilocular variety of cystic dropsy, complicated with other symptoms. A case of this sort came under my notice in the Hospital for Women, Red Lion Square. A patient presented herself with an abdominal swelling on the right side, hard and without fluctuation, not at all moveable, but could be traced down into the pelvis; it had been a considerable time in its formation, but it now began to increase. The examination *per vaginam* discovered that the brim of the pelvis was occupied by a solid tumor; a small nodule was felt rather in front of the centre of the pelvic cavity, in which was the os uteri. The sound passed upwards and forwards nearly four inches; it moved with difficulty as through a cavity, the sides of which were much compressed. This examination was made in December. Here then you have every characteristic of a fibrous tumor in the posterior walls of the uterus. The cavity is elongated, the uterus is fixed by the brim of the pelvis, and the tumor in the abdomen is hard and smooth, possessing no fluctuation. The tumor now rapidly increased, and in the January following had occupied the whole cavity of the abdomen. There was then distinct fluctuation in particular parts, and this fact disclosed to us the real nature of the case, viz. that it was a multilocular

cyst, complicated with much solid matter. The reasoning from these symptoms was correct, although they afterwards were found peculiarly complicated: for instance, the uterus was quite healthy and unconnected with the tumor, but the tumor had so elongated the left cornua of its body, and so elevated it, that the uterine sound passed into the cavity thus formed; and the tumor itself contained such a large quantity of solid matter, that it pressed so strongly the uterus between itself and the pubis, as to cause it to become fixed and immoveable, consequently leading us to suppose it to be a fibrous tumor. This is an interesting case, and deserves attentive study.

5. *From a distended bladder.*—This is not a frequent but an occasional mistake, produced from want of care: and in all such cases the irregularity can be ascertained by simply introducing the catheter into the bladder; which operation ought always to be performed before any other is commenced in the organs of the female pelvis. The uterus sometimes, though very rarely, is distended with fluid, and may also be mistaken for the disease under consideration. When, however, the uterus is distended to any extent, its tissue is developed as in pregnancy, the neck forms part of the body, and on percussion being made on the abdominal walls, fluctuation can be perceived by the finger in the vagina.

6. *From carcinomatous tumors of the ovary.*—In the early stages ovarian dropsy assumes the hardness of the carcinomatous tumors of this organ; but generally the latter affect more rapidly the health: they are heavier, the surface is much more lobulated, and there is no fluctuation; their progress is very rapid, but they never acquire the size of ovarian dropsies.

7. *From accumulation of air in the intestines.*—Many cases are on record where the flatulency of the intestines has been mistaken for ovarian disease: six patients have been operated on, and the walls of the abdomen divided to extract an ovarian tumor, where no tumor has been found, and the uterus and appendages were healthy. But the distention of the intestines very frequently assimilates to an abdominal tumor. I have been

consulted lately by two patients, who have supposed and have been told they laboured under dropsy: one formerly was supposed to be pregnant, but more latterly dropsical; she certainly presented a peculiar appearance. The abdomen was very much distended, almost to the size of the full period of gestation; and her gait was that of a pregnant woman. On examination, however, the uterus was found to be healthy, the abdomen greatly tympanitic: this tympanitis has entirely disappeared, and the patient is "as small as ever she was."* The treatment applied was that of bandaging, and ten grains of the inspissated ox gall every night. The resonance on percussion is an infallible diagnostic sign in this disease; but sometimes a peculiarity arises, and must be guarded against, and that is, that the ovarian cyst itself may be tympanitic, from its adhesion and subsequent communication with the intestines, the air of the latter passing freely into the cavity of the former: but, however, we have plenty of time to distinguish ovarian dropsy before this takes place; and when it is present there is never general resonance, as in tympanitis.

8. *From the enlargement of the viscera of the abdomen.*—The hardened masses frequently formed in multilocular cysts have been mistaken for the diseases and enlargement of various viscera, as the liver, spleen, &c. But when the viscera are enlarged the patient's health suffers materially, and the enlargement commences from above downwards; while the irregularities of an ovarian cyst are only to be found some considerable time after the cyst is formed, so that we can distinguish the ovarian growth at its commencement; and these projections will be found to be enlargements from its surface.

After we have distinguished the disease to be a dropsical state of the ovary, it will be a point of no slight consideration to ascertain the particular kind of tumor which has come under our treatment; whether it be a single cyst of the ovary itself, or whether it be a single and simple cyst developed in the broad ligament, and unconnected with the ovary; or lastly,

* See Case No. 8.

whether it be a multilocular cyst. The distinction of the first two varieties is very difficult, and can hardly be ascertained during life; but the differences between these and the last variety can be distinctly made out.

In the simple cyst, whether of the graafian vesicle or of the broad ligament, the tumor is round, smooth, and presents no inequalities on examination: the patient is usually young, the constitution suffers little or not at all, and the cyst may disappear occasionally almost without treatment, sometimes by tapping, and at others by external injury. The fluctuation observed in the two varieties differs: in the simple cyst it is very distinct, and is most likely to be taken for ascites; while in the multilocular one the fluctuation is not uniform, for the most part very obscure, and many projections may be observed in its walls. This latter disease is rapid in its growth, however, occasionally becoming stationary.

Treatment of Ovarian Dropsy.—In no disease has the application of medicine, hitherto, been of so little avail, as in the one now before us. It has been acknowledged by many, and indeed by nearly all who have attempted its cure, “that medicine has no power over it.” Dr. Hunter says, that “the ovarian dropsy is an incurable disease; and that the patient will have the best chance of living longest under it, who does the least to get rid of it.” Dr. Elliotson says, that “if any medicine does good in these cases it is iodine.” Again, “if iodine did not exist, I would not use any medicine at all in these cases; for, excepting it, I never saw any, of whatever kind, do the least good.” Dr. Blundell, speaking of purgatives, diuretics, mercurials, &c., in this disease, says, “they do no good. I will not venture to say you are not justified in making gentle attempts with these remedies; but experience shews, that from these medicines so little good is to be obtained, that in attempts like these the constitution ought not to be injured.” And lastly, Burns states, that “medicine has as much power over these cystic tumors as it has over the configuration of the patient’s nose.”

If these opinions alone were regarded, the attempt to cure ovarian dropsy would appear absurd and ridiculous. But although this want of power in medicine is seen in many, in some cases it does produce benefit; and although it may not establish a cure, it may so retard the progress of the disease, as to enable the patient to live in comparative comfort for some years.

We propose to divide the remarks we are about to make upon the treatment of this disease, into—1st, The treatment of ovarian dropsy by palliatives; and 2ndly, Its radical cure.

1. *Treatment by Palliatives.*—It is stated by some, that ovarian dropsy has been frequently cured under various plans of treatment, the success varying according to the age, health, character of the patient, and the longer or shorter duration of the disease.

If enlargement of the ovary arises from inflammatory action, the enlarged organ can be felt distinctly between the vagina and rectum, very painful on pressure, and producing a distinct tumor. Under these circumstances a strict antiphlogistic treatment is to be pursued. Local blood-letting is very important: this is to be effected, not as it is usually prescribed, viz. by cupping the loins, or by application of leeches to the vulva, but by the actual application of leeches to the tumor itself through the rectum. The bowel is to be washed out by a copious enema; then, by placing the leeches in a long tube, the upper end of which is perforated by a number of holes, the mucous membrane bulges through these perforations on introducing it into the bowel, and the leeches usually fix themselves to it, as is necessary in introducing this instrument; and when it arrives at the diseased ovary it produces pain, and ought not to be pushed further. Large quantities of blood may be taken in this way, and the application ought to be repeated every fourth day.

This local depletion is to be further assisted by calomel and opium and salines. Blisters and leeches ought to be applied to the tumor, when above the pubis, when pain and uneasiness is felt.

Dr. Ashwell regards this antiphlogistic plan as very efficacious in the early stages of this disease: he says, "I have sometimes found local bleedings by leeches, followed by repeated blisters (kept on only for a few hours), and succeeded by linseed poultices for several days, have not only retarded further growth, but have even diminished the absolute bulk of some incipient ovarian tumors."

When the tumor in the posterior wall of the vagina gives any sense of fluctuation, it ought to be punctured. This should be done with a curved trocar, where the fluctuation is most distinct.

The tumor in this position often draws down the fundus of the uterus, so as to produce retroversion of this organ; in such cases there is difficulty in evacuating the urine, and sometimes retention; if so the catheter must be used. Constipation is almost always present, producing great pain, and slight aperients are necessary.

In spite of all our endeavours, the tumor may increase and occupy the cavity of the abdomen; and it is in this position we are more frequently called upon to treat it. Various remedies have been proposed, which may be divided into medical and surgical.

(1) *The Medical Remedies.*—In this stage of the disease also the antiphlogistic plan of treatment has been advised, and was the one followed by Mr. Abernethy "in order to reduce any inflammatory symptom, and produce, if possible, absorption of the contents of the sac." Leeches applied to the tumor, followed by small and repeated blisters, have been recommended. This plan is very efficacious in removing any pain that may be present; and the constant irritation may be beneficial in removing the contents of the ovarian tumor: indeed, Dr. Bernott, of Cork, relates an instance where an ovarian dropsy was entirely cured by the constant application of counter-irritation, in the form of a large seton applied over the tumor. Small blisters also, produced by the application of the nitrate of silver, have been used, and said to be very beneficial to these swellings.

The most powerful remedies in this disease, and those which seem to have the most influence over it, appear to be iodine and the liquor potassæ. We have already stated that, in the opinion of Dr. Elliotson, iodine is the only remedy he would use, as all others under his observation had entirely failed: he says, "I have seen cases diminished, and some apparently cured, by this remedy." Dr. Seymour also speaks very highly of it, and gives cases illustrative of its remedial powers: he thinks it acts by producing suppuration of the cyst, with adhesion of it to some of the neighbouring organs, and discharge of its contents. The constitutional symptoms before these desirable events take place are frequently very severe, and often destroy the patient. Dr. Seymour remarks in one case under the action of this remedy, "the tumor appeared to grow gradually softer; at length very violent constitutional symptoms arose—tremblings, great distress of mind, and lowness of spirits; to which succeeded the symptoms of internal suppuration, a very quick pulse, tongue brown and dry, rigors followed by profuse sweats. At the expiration of a fortnight the patient began to pass purulent matter by the rectum and vagina, of various consistence and intolerable odour: this passed daily for some weeks, and the patient recovered." In most of the recorded cases where some of the preparations of iodine have been used with success—as in Dr. Elliotson's, A. T. Thompson, &c.—the tumor itself has been found to become softer on its surface, adhesions have taken place to some of the neighbouring viscera, ulcerations have occurred between their walls, and the contents of the cysts have been ejected into their cavities, to be discharged at their natural outlets.

The desired objects in the use of this remedy appears to be, suppuration of the cyst, and the discharge of its contents; but we are not always able to secure them: the inflammation may rise too high and induce a fatal result, or no effects at all will be perceived by its application; but in the majority of cases iodine acts more by inducing suppuration of the cyst,

than by any absorbent powers it may possess. Dr. Jeafferson* says, "I have also had several opportunities of witnessing the *gradual softening* of ovarian tumors under the use of iodine, when I have not been able to learn the ultimate termination of the case. This softening process on the tumor appears to be the effect of these remedies; they do not, however, possess much, if any, influence in promoting its direct absorption. What is its precise *modus operandi* it is not easy to decide."

From these remarks we may perceive that iodine, as a remedy in this disease, requires great care in its administration; that if any unpleasant effects are produced it should be discontinued for a time, and a return to its use should be careful and guarded.

The iodide of potash is the remedy chiefly employed in ovarian dropsy, and possesses the advantage of combining the iodine and potash. When the system is fully under its influence, there are disagreeable sensations about the nose, coryza is present, and an eruption of acné is observed about the shoulders. The syrup of the iodide of iron is an effectual and pleasant remedy for delicate females. When dyspepsia is present, the iodide of potash is given in doses of five, increased to twenty grains, in some bitter infusion, two or three times a-day; or it may be given with a purgative when constipation is troublesome.

Some patients are unable to take iodine in any of its forms, on account of its action being very quickly displayed in their system: a good substitute in such cases is the liquor potassæ. This medicine, given in as large doses as the stomach can bear, (small beer or table ale is the best vehicle, on account of its efficiently disguising its taste,) has been very successful, under the direction of Sir B. Brodie, in removing scrofulous and steatomatous tumors: it is found also to act in a similar way to iodine in ovarian disease. Dr. Seymour states that this remedy has been used in ovarian disease; that the general

* *Med. Gaz.*, Sept. 1844.

health has appeared to be often greatly improved under its use, and the formidable disease itself is reported to have disappeared under its employment. "The liquor potassæ, in such cases, appears to act by inducing suppuration in the cysts, which is afterwards discharged, adhesions having been formed with the neighbouring viscera. In this respect its action resembles that of iodine, and is contra-indicated when increased vascular action is present; and in fact it is in the leucophlegmatic habit of body that it appears to be most applicable, whether as a curative or only as a palliative remedy." Dr. Warren* relates a case where this remedy produced softening of the tumor, and a discharge of purulent matter by rectum, with a perfect cure of the patient.

The late Dr. Hamilton, of Edinburgh, proposed a plan of treatment in ovarian dropsy, which under his management was very successful. It consisted of moderate bandaging, percussion on the tumor, and small doses of the muriate of lime. The percussion could either be made by means of the fingers, or by an instrument consisting of five balls, attached by rods at right angles to the handle, so as to somewhat resemble the hand and five fingers. I will give his own description of his mode of treatment: he says, "Adverting to the effects of percussion and of pressure in chronic rheumatism, and knowing the influence of the continued use of the muriate of lime in indolent glandular swellings, I was led to the trial of these several means, as being at any rate perfectly safe. I advised, therefore, that moderate and equable pressure of the abdomen should be made by means of a suitable bandage; that the enlarged part should be subjected twice a-day to gentle percussion; and that a course of small doses of muriate of lime should be continued for at least several months. When pain or tenderness was experienced on the ovary being pressed upon, I recommended the daily use of the warm bath. This plan of treatment has been much more successful than I had anticipated: in seven cases in which it

* Warren *On Tumors*.

has been used, the enlargement has so completely subsided that it is no longer tangible. There could be no mistake in the majority of these cases, not only because the size of the diseased ovary was very considerable, the fluctuation was distinct, and all the ordinary characteristics were well marked, but also because the nature of the affection had been previously ascertained by some of the most experienced practitioners in London. . . . Previously to the diminution of bulk in all the successful cases, it is proper to add, that the circumscribed enlargement of the ovary has invariably become soft. This change was so remarkably obvious in the first of the successful cases, that the indentation of the patient's fingers upon it was similar to what occurs in anasarca, although it had been previously incompressible, as the tumor extended as high as the right hypochondrium: this important change was first perceived by the patient herself."

This plan has not been so successful in the hands of English practitioners as in those of Dr. Hamilton. The question arises, whether the plan has been really tried, or only partially put in practice. I fear that the latter has been the case; for when we consider the difficulties which arise in treating a chronic case, where the improvement is only slow and scarcely perceptible, we cannot wonder that the patient's exertions should become relaxed, and the chance of cure abandoned.

Mr. Isaac B. Brown has lately published a plan of treatment, having the same indications as Dr. Hamilton's, although the means by which he intends to secure success are different. His plan consists in evacuating the cyst by tapping, after it has ceased to increase on the application of mercurial remedies and diuretics; and then, by applying large pads over the cyst, and bandaging up the abdomen very tightly, he endeavours to obtain obliteration of the cyst, and consequent cure. He has published several successful (?) cases arising from this treatment.*

* See *Lancet*, vol. i. New Series, p. 179.

He says, "I divide my treatment into constitutional and local treatment, and treatment after tapping.

"1. The constitutional one consists in the administration of mercurials, internally as alteratives, and externally by friction over the abdomen, and continued until the gums are slightly but decidedly affected: and this must be continued for some weeks. I lay particular stress upon this point: at the same time diuretics must be given, and after the first week tonics must be combined with them. The food should consist of light animal diet, and should be unstimulating; and the patient should take daily exercise in the air."

"2. Local treatment. This consists of the careful application of a tight flannel bandage, so as to produce considerable pressure over the tumor. When it is found that the abdominal action has been checked by a positive decrease in the tumor, and a continuation of such decrease, or by a positive non-increase for some weeks, then the cyst should be tapped and all its fluid evacuated."

"3. Treatment after tapping consists of accurate padding and tight bandaging over the cyst and body generally for two or three weeks; and the medicines and position ought to be continued for at least six weeks. I would particularly wish to enforce the importance of the after-treatment, as on that depends very much the success or failure of the case."

This plan of treatment has been given to the profession, and apparently sanctioned by a number of successful cases; but I am bound to add, that some of those cases, called and published as successful, have come into other hands; and I am authorized by a physician to state, that two of Mr. Brown's cases have come under his charge—one died of ovarian dropsy, and on a *post-mortem* examination the cyst was found still to exist as large as before; the other is still ill; the cyst has refilled, and this gentleman has been obliged to have recourse to tapping. This fact reduces considerably the value of Mr. Brown's cases. Again, on referring to the cases themselves, can we, on their recital, confidently assert that they are all cases of ovarian cysts? the

real diagnostic marks are not *too clearly* stated, and the fluid evacuated by some resembles that secreted by the peritoneum. In a discussion at the Physical Society of Guy's, when this point was urged, Mr. Brown failed to convince the members that a cystic tumor was present in several of the cases he related to them. And lastly, can the system of salivation, which is an essential part of the treatment, be borne by many, or ought it to be administered in others who are young and healthy? The experience of the heads of our profession are against its administration; and some think "that we are not justified in persevering with a remedy which always produces direful effects upon the constitution, and has so little effect upon the cyst itself."*

Pressure, properly applied, is undoubtedly the best part of this plan; but this is not original, as Hamilton and others have advocated its efficacy long before Mr. Brown's treatment was thought of: and even this only produces certain effects, for if it is too forcibly applied, the circulation becomes interfered with, and it is unable to be borne. Even if great pressure can be maintained steadily, we are fully aware that it usually fails in the obliteration of cysts on the external parts of the body; and where a cystic tumor is placed on the scalp, the most favourable place for pressure, it rarely obliterates it. Then we can hardly suppose that the effects of pressure can be of much service, where there is no point of resistance, and where serious consequences may be produced in other organs. Pressure again can only be tried, with a hope of success, in those cases where the cyst is simple, for it must inevitably fail when a multilocular cyst is under treatment: in this case all we could hope for would be, to retard its rapid development.

The application of pressure to the abdomen produces a resisting force to the rapid development of these bodies, and acts in the same way that extensive adhesion would do, in stopping its enlargement by placing resistance to its increase. Dr. F. H. Ramsbotham relates a case of this kind, and says, "More than thirty years ago a friend of my father's, living in the north of

* Blundell.

England, brought his daughter, an unmarried lady, then in the prime of life, to London, for medical advice, in consequence of an abdominal tumor, which was increasing steadily. My father had no hesitation in pronouncing it an enlarged ovarium. Both Baillie and John Clarke confirmed his opinion, and recommended a sojourn at the sea-side. After her return home she made a journey to the coast, over rough roads in an uneasy carriage; the jolting occasioned an acute attack of peritonitis, which brought her into considerable hazard, and under which she was seen by the late Mr. Hey of Leeds. The swelling, however, from that date ceased to enlarge: she is still alive, in the enjoyment of good health, and the ovary is now I believe of the same size that it was when she undertook her fortunate trip to the sea-side. In this instance there is no doubt that the inflammatory attack, some way or other, put a sudden stop to the morbid growth; and it is most reasonable to suppose that it did so by effecting extensive adhesions."

With all our vigilance and perseverance, the tumor may gradually increase to such a size as to become troublesome by its bulk, and endanger life by its interference with vital functions. We shall in this stage of the disease have to treat the various symptoms arising from pressure. The stomach may be pressed on, and cause constant vomiting, which may baffle the most skilful and varied treatment. This is produced by the pressure of the cyst on the stomach, and not by diseased function or organic disorganization of that viscus. In one case I saw, this was proved by the vomiting ceasing immediately after tapping; so that without this reduction in size, the ordinary treatment by effervescing salines, hydrocyanic acid, creosote, sinapisms, and blisters, would be of no avail. Dyspnoea is also a very frequent complication of this stage of the disease; it may be partially relieved by position, but its permanent remedy is the reduction of the sac. The kidneys are also frequently interfered with; the pressure of the enlarged ovarium prevents the proper secretion from taking place. Here some strongly recommend diuretics, but they can do no good, the cause being local

not functional. Remove the pressure, and the kidney gives out its secretion, natural in quantity and consistence. This fact was well illustrated in a case already noticed, where the secretion of urine was greatly diminished during the distention of an enormous cyst, but was instantly restored to its natural quantity and quality, after the pressure which it exerted had been removed by tapping. Suppression again took place on the enlargement of the tumor, which resisted every diuretic.

Diuretics are valuable when ascites exists as a complication, but should never be used when pressure is the cause of the suppression; they are also useful where there is œdema of the ankles or eyelids.

(2.) *The Cure of Ovarian Dropsy by the addition of Surgical means.*

1. *By tapping.*—Practitioners generally have a great dislike to have recourse to this mode of palliating the disease. Experience teaches them that, in the majority of cases, the relief obtained is but temporary, the cyst rapidly refilling, and the patient left in a worse condition than before: but, however, there are cases on record, where this remedy has been followed with perfect success, and many could be quoted to establish this fact.* The operation in itself is considered one of the most simple. The patient generally sits in a chair or on the side of the bed, with a large piece of flannel covering the abdomen, the ends being slit up in order to adapt the pressure equally to the upper and lower portion of the abdomen. These ends are placed one within the other, and drawn tightly by assistants; a small opening is made in the flannel anteriorly, through which the trocar passes. This instrument may be introduced at once, or the skin may be first divided, which is the most usual way, by a bistory or lancet; or lastly, the latter may be carried directly into the sac, and a blunt-pointed trocar, instead of a sharp-pointed one, and canula may be introduced into the opening. Gradual pressure is to be made with the bandages,

* A case of ovarian dropsy, under Dr. A. T. Thompson, which had been tapped fourteen times, and the last tapping cured her.

in order that the cyst may be compressed, after its contents are evacuated, and also to secure the patient from fainting, and protect the viscera, which would otherwise be left unsupported by the withdrawal of the fluid. Immediately after the operation the patient feels faint, and sometimes syncope takes place, especially if the pressure be not kept up upon the abdomen. This has sometimes, but rarely, been fatal; usually the patient recovers quickly, and feels great relief; this is particularly expressed by the patient: instead of dyspnœa, a feeling of distention, and fear of suffocation, there is a distinct calm; the lungs perform their office, and the distress ceases. After tapping, the disappearance of the tumor is almost entire or only partial; this depends upon the character of the cyst. If it be simple it almost entirely disappears, but if multilocular the patient is surprised to find large hardened masses still remaining in the abdomen; in a few days she feels herself to become more distended, and from this time it gradually enlarges until she attains the same or a larger size than before the operation.

There are several points worthy of notice in the operation of tapping. 1st. The operator should correctly ascertain the most prominent part of the tumor, and the situation of the space where fluctuation is most distinct. That portion midway between the umbilicus and pubis in the linea alba is the most appropriate; but in the multilocular variety, on examination and percussion, distinct hard masses may be found there, which ought particularly to be avoided; for if the trocar is introduced into them the fluid contents of the sac will not be drawn off, and the patient will be subjected to an inflammatory attack.

2nd. The patient ought always to be informed that the actual decrease of the size of the tumor may be very slight, especially if we suspect a cyst of the multilocular variety. In this case a small cyst, giving a distinct evidence of fluctuation, may be opened and only a few ounces of fluid be evacuated, which gives only a partial relief, and the operator may be compelled to make another puncture.

3rd. The trocar should be introduced with a certain degree of justifiable force. A timid surgeon often fails in getting into the cyst of an ovarian dropsy, from the fear of using too much force. The sacs of these tumors are frequently very firm and dense, and if a certain degree of power is not used the sac will be pushed before the trocar, and its cavity will not be opened. This circumstance occurred under my notice, and the operation was abandoned.

4th. All large veins should be avoided.

5th. It is necessary to be particular in the diagnosis, and always to ascertain whether the bladder has been fully evacuated; if any doubt exists the catheter should be introduced before the operation; this ought to be done in every instance, as we cannot always depend upon the patient's opinion or expressions, for such cases have occurred where the distended bladder and the pregnant womb have each been punctured for cystic dropsy.

Dangers of the operation.—This operation may be performed very many times on the same individual without any bad effects, although it may only give occasional relief to the patient. Several cases are recorded of enormous amounts of fluid being taken away, by a great number of operations, through a series of years, some during thirty years, with no marked effects upon the constitution. The number of times one patient has been tapped, and the amount of fluid taken away, has been considered worthy of being recorded on her tomb. In Bunhill-fields' burial-ground is an old tomb, with the following inscription. She was a patient of Dr. Mead's, who mentions the case.

“ Here lies Dame Mary Page,
relict of Sir Gregory Page, Bart.
Who departed this life March 21st, 1728,
in the 56th year of her age.

On the opposite side of the tomb is the following :

“ In 67 months she was tapped 66 times,
had taken away 240 gallons of water,
Without ever repining at her case,
or ever fearing the operation.

But there have been larger amounts of fluid withdrawn, and the patient has survived even a greater number of operations, than good dame Page. In the celebrated case related by M. Martineau of Norwich, there were 6831 pints, or 13 hogs-heads, of fluid withdrawn from an ovarian cyst during eighty different operations.* When a pupil, I assisted at the forty-ninth operation of tapping in a case of ovarian dropsy. This patient, for many years previously, was tapped twice a-year; she was under my observation two years, during which time the operation was obliged to be performed oftener; and during the last year the relief she received was partial, and the operation had to be repeated every two months. She at last died of inflammation of the cyst, which was found to be multilocular and of enormous size. In most of the medical periodicals of the day you will find some of these extraordinary cases related, and it is no slight encouragement for our patient to be aware of this fact; but we must not blind our eyes with the exceptions and forget the rule, for these cases are singular and therefore recorded, while the majority of cases die in much less time and are buried. Dr. Blundell's practical observations on this point are well worthy of record. "Although," says he, "women do live now and then to undergo these frequent tapplings, yet they more generally sink; and hence, in ordinary practice, the longer the first tapping can be delayed the better, for there is nothing more unwise than to ground your general practice upon the exception to the rule, though the error is not unfrequently committed." I have shewn also elsewhere, that the majority of patients live only two years after the first tapping.

1. It is then possible for the operation of tapping to be performed and no danger arise; the patient may recover from its effects, until it is again required; but this is not always the case. Rapid and fatal syncope may follow the operation, or the patient may die from exhaustion, after having rallied for a few days. The natural tendency of the ovarian tumor, when uninterfered with, is that of a slow growth; but when the fluid

* *Phil. Trans.* vol. lxxiv. p. 471.

is withdrawn from the sac, the pressure which before existed is taken from the secreting vessels, consequently reaccumulation of fluid quickly follows, which frequently produces rapidly fatal symptoms.

2. Danger arises from this operation by the accidental puncture of one of the large vessels which frequently ramify on the parietes of the cyst. I have now seen several *post-mortem* examinations where these tumors existed, and have observed large vessels, nearly the size of the little finger, ramifying on the sac, and one was placed in such a position which would have been inevitably wounded had an operation been performed. These large vessels also may arise in the omentum, and this may be intimately attached to the anterior part of the cyst: this peculiarity occurred in a case where the operation of extraction was performed, and at which I was present a few weeks since; the vessels were as large as the sinuses of the dura mater.

3. The greatest danger to be apprehended after tapping, is the inflammation of the cyst itself, or sometimes of the peritoneum of the abdomen. This is almost the inevitable termination, some time or other, of the lives of the patients who are subjected to tapping: according to my experience, the cyst itself is the part most usually inflamed. In some cases a portion of the ovarian fluid escapes, and acts as a foreign body on the peritoneum; in others the internal lining of the cyst takes upon itself an inflammatory action, or the trocar may have punctured a mass of cysts, and thus produced inflammation. The effects of the inflammation, however produced, are alarming; all the symptoms of active fever are found, there is great pain in the abdomen, which becomes tense and very tympanitic, vomiting ensues, and rapid exhaustion takes place, followed by death.

I have collected a number of cases where the duration of the disease, after the first tapping, was accurately recorded, and I find that more than one-half of those who died did so within four months, and nearly half of these were only tapped once:

almost all the deaths after the first operation were attributed to the inflammation of the sac or peritoneum.*

The operation of tapping, in some instances, cures the cystic tumor; this happens when it is unilocular and simple: but these cases are rare, and from the facts which we are about to bring before your notice, we may well dread to perform this operation.

In very many cases the operation can do no good, the tumor being made up of several small cysts; in many others it only affords partial relief, and in some it actually kills. We may well conclude the notice of this remedy with Dr. Blundell's opinion of it: he says, "Make the best of it, and tapping, after all, is an unsatisfactory sort of remedy; dangerous in scirrhus-dropsy; of partial relief in dropsy of many cysts; of no effect where the cystic material is viscid; obnoxious to inflammations, adhesions, suppurations, exhaustions, repetitions, and death, even in cases the most favourable: and the more I have seen of this operation, the more I have felt inclined to whisper to myself, when the surgeon has taken up the instrument—I wish I could do something better."

When is the operation of tapping to be performed?—There are three periods when this operation may be performed: (1) When the tumor arises just above the pubis; (2) When the tumor occupies the abdomen, but without great distension; and (3) When these tumors press upon important viscera, and impede vital functions.

The practice in the first position is recommended by Dr. Blundell, upon the principle that the surface from which fluid is secreted is small at that period, and that there is a greater chance of a curative process being set up.

The operation can be performed easily enough when the tumor is situated between the vagina and rectum, and when the fluctuation is distinct. Dr. Ogde, of Rochdale,† gives a

* The particulars and the table itself will be given when speaking of the operation for the extraction of the ovary, in order to avoid repetition.

† See vol. xxvi. of the *London Medical Gazette*.

case of successful cure by this method. I have seen it succeed for a time; but the patient took out the canula which was left, and the secretion again returned. I have also seen a case operated on in this way terminate unsuccessfully, from the cyst being multilocular, and the base of the tumor forming almost a solid substance, although there was distinct fluctuation. Many successful cases might be quoted, and more especially where they have been discovered and operated on during parturition. But Dr. Blundell thinks also that the tumor might be opened when it is as large as a child's head, and situated above the brim of the pelvis. "Nor," says he, "supposing our knowledge be sufficient, and our caution great, would it perhaps be impracticable to effect all this, even when the tumor lay above the brim of the pelvis in the hollow of the ilium. For this purpose, might not an opening be made in the abdominal covering large enough to admit the fore-finger like a canula; and might not the point of the finger be placed on the surface of the ovary, so as to ascertain that no intestine was interposed; and then, when sure the intestines and bladder are not interposed, might we not pass a very small trocar through the opening and into the ovary, so as to evacuate the contents at the very commencement of the disease?"

There can be no doubt that the early evacuation of the fluid is a desirable proceeding; and when the tumor can be felt in the vagina, having distinct fluctuation, it ought decidedly to be punctured. The success of this operation has been very great when this disease has complicated labour. From our knowledge of abdominal surgery at the present time, we are aware that a small incision into the peritoneal cavity is not so dangerous as at one time we were led to suppose. When house-surgeon of the University College Hospital, I saw a child recover who had received a wound of an inch long in the abdominal parietes and through which the bowel protruded, But I think we should be quite certain of the existence of the

cystic nature of the tumor before such an attempt is proceeded with.

Dr. Bright does not approve of this early paracentesis. "It has," says he, "been recommended to have recourse to paracentesis, when the tumor is as large as the uterus, at the termination of pregnancy, before the vital functions are impeded, or the distention of the cyst has been very extensive." He thinks the period most preferable when the cyst becomes larger. "I conceive," says he, "that the time of the operation has arrived when the tumor pretty fully occupies a large portion of the abdomen, giving the appearance of pregnancy advanced to the last months, and before any material mischief seems to threaten either the surrounding viscera or the parietes of the tumor itself: for there can be little doubt that the forcible distention of the sac, continued beyond a certain limit, will endanger its inner surface, and perhaps prove one cause of the ulcerative changes which often take place, and are the source of great constitutional irritation and death."

And lastly, many practitioners agree that the rapid refilling of the cyst after the first tapping is so dangerous, and produces such fatal effects, that they willingly defer the operation, until they are compelled to relieve their patient from the severe symptoms they suffer; the operation being performed by compulsion, not by choice.

I do not think any distinct rule can be laid down which would embrace the period of tapping in all cases of ovarian dropsy. It appears to me that each individual case has its peculiarities; that the period of the disease at which we are called on to prescribe is so various, and the nature of the cysts is so different, that each case ought to be treated individually, according to the tact of the surgeon. When the patient is young and healthy, I think the plan of puncturing the cyst early, and applying pressure and friction, to be the best mode of treatment; and the employment of iodine internally, so as not to affect the health, is beneficial. But when a large multilocular cyst comes under treatment, that

will be the best where least is done to the local disease, and the general health supported: in such a case tapping is injurious, and ought if possible to be avoided.

There have been several other surgical operations upon the cyst itself, to cause an obliteration of the secreting power of its lining membrane.

It has been proposed to make extensive incisions into the cyst, or take portions away: and cases are recorded by Le Dran and others, of cure by this treatment. Setons have been passed through the walls of these cysts, and tents have been left in openings made into them, to produce suppuration and adhesion of the internal walls of the cyst: Mr. Key tried these remedies in several instances, but found them fail in all. Cysts have also been injected with irritating fluids for the same purpose; and some cases have partially justified the treatment, while others have entirely failed.

All these plans are now rejected from modern practice, because the constitutional irritation following their application is so great as to be in most instances fatal. Also, when these remedies have done their utmost the disease is not cured; fistulous openings remain, and at last the patient dies exhausted.

II. *The radical cure of ovarian dropsy by excision of the sac.*—Ovariectomy is apparently an easy although a very dangerous operation: nothing can be more simple than making an incision from the ensiform cartilage to the pubis; it is done at any *post-mortem* examination: but the effects of such an opening in the living subject are fearful in the extreme, and in many instances fatal.

In the present state of our knowledge opening the peritoneal cavity is no longer considered to be an operation of necessity fatal, and it does not require a number of experiments, like those of Dr. Blundell's, to put the question at rest. One hundred and eighteen patients have already submitted to the experiment, and the results of these cases it will be our duty to investigate.

Before we admit an operation like that under consideration,

we must distinctly determine three questions, which are of the utmost importance; and to these we shall direct our attention.

I. What is the common course of ovarian dropsy, and what the result of its ordinary treatment?

II. What are the results in those cases where the ovarian cyst has been extracted?

III. And what is the fair conclusion we can arrive at, as to the practicability of the operation, on the review of the two former questions?

But before entering upon these questions, it will be judicious to be thoroughly acquainted with the opinions held by those who are worthy of our confidence. I do not wish to lay much stress upon individual opinion, and especially where it has not been formed by actual experience; but I do think that the opinions of our predecessors, and those who have obtained eminence in their profession, are worthy of some consideration and reflection.

The operation of the extraction of cystic tumors is only of recent date in England, but lately has been struggling for an existence to rank among the acknowledged capital operations of surgery. It is said to have been proposed by Vanderhaar, and afterwards by Delaporte, Morand, and Logger. It was first undertaken by M. L'Amononier of Rouen, and afterwards, in 1809, by Dr. M'Dowel of America. The operation was performed at Edinburgh by Mr. Lizars, in 1823, who was unable to find a tumor; and in 1826, Dr. Granville of London operated on a patient, but was unable to remove the tumor. Since this time 118 patients have been operated on with variable success.

Sir C. Bell thought that the dangers arising from the operation itself were quite sufficient to deter the surgeon from undertaking it. It is the opinion of Dr. W. Hunter that excision ought not to be attempted: he says, "It has been proposed indeed by modern surgeons, deservedly of the first reputation, to attempt a radical cure by incision and suppuration, and by the excision of the cyst. I am of opinion that excision can hardly be attempted,

and that incision and suppuration will be found by experience to be an operation which cannot be recommended but under very particular circumstances." Mr. Lawrence thinks extirpation of the ovarium is an operation so likely to kill the patient, that he does not think it advisable to proceed to it. In the opinion of Mr. Liston, these operations are exceedingly unjustifiable; and Dr. Seymour* states that the arguments against such an operation as extirpation are numerous and strong, and the probabilities of success very small. "If the tumor be not large or the woman's health unbroken, she may live many years, as long as is allowed to humanity, in the enjoyment of a tolerable existence. If the health be much broken, the cure of so large a wound, in a weakened constitution, would be difficult, if not, in the majority of cases, impossible. If connected with scirrhus in other parts of the body, it is inadmissible; and if the growth itself be of the nature of fungous hæmatodes, all experience tells us that, should the patient survive or the wound heal, the disease will recur in other vital organs of the body. Nor do its difficulties rest here: when these growths enlarge to a great size they must frequently adhere, and here the operation is out of the question. If all these exceptions then are estimated, the case which remains, in which such a risk is advisable and such an operation feasible, with any fair chance of a happy result, is rare indeed."

These then are some of the opinions held by men high in the profession upon this operation, and those which are in favour of it will be considered when speaking of the operation itself. We will now, as far as we are able, produce every fact in our power both for and against the radical treatment, and endeavour to draw some correct conclusions.

1. *What is the ordinary course of ovarian dropsy, and what is the result of its ordinary treatment?*—This disease, as we before stated,† is most common in and usually attacks patients about the prime of life, when the sexual organs are fully developed and their functions in a state of excitement. When

* Seymour *On Diseases of the Ovaries*.

† See Table No. 3.

once established, the disease continues to increase, and in half the cases terminates by death in two years. Sixty-three in 123, and ninety out of 123, die in four years, leaving only thirty-three patients, or not quite one in four, to survive that period.

In order to prevent this severe mortality, several means have been introduced into practice: those connected with medical and surgical treatment have already been examined, and from our previous remarks we have shewn that tapping is the best palliative for the disease, that is to say, the lives of some patients have been more prolonged by this operation than by any other treatment. We must now inquire whether this is a usual result or not.

It is admitted by all that this operation "is the beginning of the end," that it will require repetition during longer or shorter periods; exhaustion or inflammation, produced by the operation itself, generally terminating the case. In unilocular cysts this operation may be repeated several times without producing serious results; and where the disease retains this character, it may be relieved for many years by the operation: but experience shews us that the tendency of these unilocular cysts is to produce others upon their inner surface, and when this is effected the danger of the operation is greatly increased.

There is no doubt but that, as in the cases we have mentioned, tapping does prolong for a considerable period the life of some patients; but all will agree to the fact that the *necessity* of the operation becomes much more frequent, the refilling of the cyst becomes more rapid, until the patient is worn out by the disease.

In order to ascertain the mortality following this operation, and the extent of the benefit conferred on the patients who submit to it, I have collected a table of forty-six cases, where the results were observed and noticed. It consists of eight patients observed by myself, five by Dr. Ashwell, five by Dr. P. Smith, six by a surgeon of high standing in London, and the remaining twenty-two were taken from many of the public Journals.

Shewing the Mortality of Ovarian Dropsy after the first Tapping.

No.	Name.	Age.	Single or Married.	Duration of the Disease.	Number of times Tapped.	Duration of the Disease after the first Tapping.	Result.	Sources from whence the Cases were taken.
1	Dame M. Page	56	M.		66	67 mths.	Died	
2	Sarah Pearce	47	S.	3½ years	15	3½ years	Cured	Unpub. cases obs. by myself
3	A. Sealbrook	31	M.	3 years	1	4 days	Died	" "
4	C. Cleark	36	W.	2 years	1	7 days	"	" "
5	E. Potts	29	S.	3 years	2		Relieved, but has refilled.	" "
6	Eliz. Sym	29	S.	3 years	2	1 year	Died	" "
7	S. Ringham	24	S.	12 mths.	2	2 months	"	" "
8	— Baxter	25	S.	2 years	1	3 days	"	" "
9	— Woodbine	26	M.	1½ years	2		Sac refilled	" "
10	— Martin	33	M.	2 years	1	12 hours	Died	" "
11	A Servant	40	S.	7½ days	1	50 days	"	Med.-Chir. Rev. Oct. 1836
12	E. S.	36	M.	2 years	12	2 years	"	" "
13	Marg. Emily	28	M.	3 years	1	2 days	"	" "
14	A Lady	36	M.	32 days	1	4 days	"	" "
15	A Lady	23	S.	10 mths.	1	8 weeks	"	" "
16	E. R.	21	S.	3 years	1	12 days	"	Edinb. Med. & Surg. Journ. 1843-44
17	A. Thomas	31	M.	4 months	1	31 days	"	Medical Gazette
18	S. Wolsnough	63	M.	30 years	5	15 years	"	" Nov. 1842
19	Mrs. D.	34	M.	3 years	20	2½ years	"	" Feb. 1833
20	Jane Morris	31	M.	14 mths.	3	9 weeks	Relieved	" Jan. 1830
21	Grace Lawier	73	M.	3 years	1	24 hours	Died	" Mar. 13, 1846
22	M. A. Clarke	45	M.	7 years	1	1 month	"	Lond. Med. & Surg. Journ. vol. v.
23	Maria Grant	23	S.	6 years	3	4 months	"	Med.-Chir. Trans. vol. III.
24	Anne Payne	52	M.	12 years	7	9 months	"	" "
25	—	22	S.	26 mths.	23	20 mths.	"	Dublin Journal. vol. XIX.
26	Mrs. Therapall	53	M.	8 years	78	8 years	"	Lancet, vol. for 1844
27	Jane Roberts	55	M.	3yrs. 3m.	29	3 years	"	" "
28	—	22	S.	6 months	4	4 months	"	" "
29	Mrs. Butress	24	M.	1½ years	10	1yr. 2m.	"	" Oct. 1831-2
30	S. Kelly	38	M.	10 mths.	1	2 days	"	" Jan. 1828-9
31	Mrs. —	25	M.	2 years	4	18 mths.	"	Dr. Ashwell's cases
32	Mary S.	26	M.	3 years	1	afew hrs.	"	" "
33	Caroline D.	27	M.	4 years	1	4 days	"	" "
34	Mary K.	25	M.	6 years	5	4yrs. 3m.	Cyst stationary.	" "
35	Elizabeth T.	35	M.	20 mths.	1	20 mths.	Died	" "
36	M. Francklyne	30	M.	3 or 4 yrs.	1	3 weeks	"	Dr. Protheroe Smith's patients—unpublished
37	Jane Bagling	26	S.	4 years	1		Relieved result not known, left London.	" "
38	Eliz. Baley	27	S.	3 years	2		"	" "
39	M. Nevil	34	M.	2 years	1		Recovered	" refilled, now very large
40	M. Jones	24	S.	9 months	1	2 weeks	Died	" peritonitis
41	A. B.						"	{ Cases of an eminent Surgeon
42	C. D.						"	" "
43	E. F.						"	" "
44	G. H.						"	" "
45	I. K.						"	" "
46	L. M.						Still living	" "

TABLE A.

Of these 46 patients 37 died, and 9 recovered, and are supposed to be still living. Of the 37 who died,

1	died a few hours after the operation	
1	" 12 "	"
1	" 24 "	"
2	" 2 days	"
1	" 3 "	"
3	" 4 "	"
1	" 7 "	"
1	" 12 "	"
1	" 2 weeks	"
1	" 3 "	"
2	" 1 month	"
3	" 2 "	"
1	" 3 "	"
2	" 4 "	"
6	" 12 "	"
1	" 18 "	"
2	" 20 "	"
2	" 2 years	"
2	" 3 "	"
1	" 6 "	"
1	" 8 "	"
1	" 15 "	"
<hr/> 37		

TABLE B.

Of the 37 patients who died,

18	were only tapped once	
2	" twice	
1	" 3 times	
2	" 4 "	
1	" 5 "	
1	" 7 "	
1	" 10 "	
1	" 12 "	
1	" 20 "	
1	" 23 "	
1	" 29 "	
1	" 66 "	
1	" 78 "	
5	{ The number of times the operation was performed in these cases were not mentioned	
<hr/> 37		

TABLE C.

Of the 48 patients, where the duration of the disease, from its commencement to its termination, either by death or recovery, is mentioned.

In 8 its duration was 1 year or under			
14	"	2	"
11	"	3	"
5	"	4	"
2	"	6	"
1	"	7	"
1	"	8	"
1	"	12	"
1	"	30	"
2	"	were unnoticed	
<hr/> 46			

Now it will be observed from the above tables, that of the 37 patients (Table A) more than half died within four months, and 27 of 37 died within a twelvemonth; and of this number 18 were only tapped once. This then gives a great mortality, not only to the operation generally, but the first tapping in particular.

It may be said, that in the cases referred to the disease itself would have been fatal had not tapping been performed. In many of these cases this objection holds good, and some would have fallen a sacrifice; but when we refer to Table No. 3, we find that the disease existed only four years in 80 of 123 patients: and this is confirmed in Table C, (which are recent cases,) that 38 of 44 died within four years.*

This opinion of the early mortality of this disease after tapping has been confirmed by Mr. Southam, who also collected twenty cases; the results of which were, that 14 died within nine months, 2 within eighteen, 4 in several years (from four to nine).

* Dr. F. Bird has also favoured me with the results of 50 cases in which the disease terminated fatally, and where the ordinary treatment was applied.

"Of 50 cases which have come under my notice, 4 died within one year from the commencement of the abdominal enlargement, 12 within two years, 12 within three years, 10 within four years, 6 within five years, 2 within eight years, 2 within nine years, and 2 within ten years."

In this table, more than half died within four years, viz. 38 of 50.

TABLE (No. 8.)*

Mr. Southam's Table of twenty cases of Ovarian Disease, in which Paracentesis was performed.

No.	Initials of Patients.	Age.	Married.	Single.	Duration of life after first operation of Paracentesis.	No. of times tapped.	Cause of Death.
1	—	44	1		24 hours	1	Inflammation.
2	A. B.				48 "	1	—
3	E. S.	36	1		a few days (7)	1	—
4	H.				several days (10)	1	—
5	M. H.	40			1 month	1	{ Ulceration of the sac, and escape of its contents into the abdomen.
6	—	45			1 "	1	{ Exhaustion from extensive scirrhus disease.
7	B.				1 "	1	Exhaustion.
8	—		1		2 "	2	
9	E. W.	26	1		4 "	3	Exhaustion.
10	S. L.	35	1		7 "	1	
11	M. M.	53	1		7 "	5	Inflammation.
12	C. E.	40			8 "	6	Exhaustion.
13	— O.	54	1		8 "	1	—
14	S. B.	20		1	9 "	4	Inflammation.
15	E. S.	22		1	15 "	6	—
16	A. M.	34	1		18 "	2	Inflammation.
17	— T.	33	1		4 years	7	{ Exhaustion from pressure of tumor.
18	E. W.	27			4 years 9 months	14	{ Inflammation after tapping.
19	E. B.	32		1	7 years	4	—
20	M. N.	85	1		8½ "	11	—

Mr. Southam makes the following remarks upon the table he has collected. "Thus," says he, "14 died within nine months after the first operation, 4 of which survived it only a few days; of the remaining six, 2 died in eighteen months, and 4 lived for periods varying from four to nearly nine years. It further appears, that paracentesis does not prolong life for more than eighteen months and nineteen days, and that one in five dies from the effects of the first operation."

From my table it is seen, that the mortality is greater and much more rapid than in that last quoted. For we find;

* *London Medical Gazette*, Nov. 24. 1843.

that of 37 patients who died, 21 did so within four months, and 18 of these cases (one in two) were only tapped once, 15 of which died within one month; so that nearly half these 37 patients died after the first operation.

But the fairest average which could be obtained will be from the combination of the two tables; and I find, that of the 57 patients who died, 24 did so after the first tapping, and the following Table shews the time they survived it.

TABLE (No. 9.)*

Consisting of 15 Patients of my own, and 9 from Mr. Southam's Table, who died after first Tapping.

No. of Patients.	No. of times Tapped.	Duration of Life after first Tapping.
1	1	Died within a few hours
1	1	" 12 hours
2	1	" 24 hours
3	1	" 2 days
3	1	" 4 "
2	1	" 7 "
1	1	" 10 "
1	1	" 12 "
1	1	" 2 weeks
1	1	" 3 "
4	1	" 1 month
2	1	" 2 "
1	1	" 7 "
1	1	" 8 "
24		

We thus find from the results of both tables, that 24 cases out of 57 died after the first tapping; that these all died in eight months—that 20 of the 24 within one month, and 12 of the 20 within seven days.

I am fully aware that these results will not coincide with those of many, and I may say very many practitioners. The old notion of tapping interminably is, however, an incorrect one; and by referring to individual practice the profession will find, that for one of these extraordinary cases that have survived 50 or 60 tappings, many die, and that in a very short period.

The error which may have crept into these tables—derived from the source from whence they come—may be, that the cases have been published because they have died, and therefore are supposed to be peculiar; while those cases who have their regular periodicalappings are supposed to be of common occurrence. With this idea in my mind I consulted very many eminent men in London, and endeavoured to obtain their opinion on this subject. One told me it was the “beginning of the end;” that after the necessity of tapping became apparent, the patient usually died within a few years. Another, who referred to his Case-book, gave me the results of six cases which had come under his own notice, and he found that five out of the six had died within a twelvemonth after the first tapping. A third, that lately he had tapped a good many, but that several had died after the operation. And a fourth stated, that he found the operation much more dangerous than was generally imagined. But all thought that the mortality after the *first* tapping, in my tables, was too great. However this may be, I have taken all the cases where the facts are mentioned indiscriminately, and without bias for or against the operation, and the result is above: it agrees with my own experience, and when minutely examined I fear it will do so with others.

However, if the mortality is not so great after the first tapping, all allow that when this operation has been once performed, the necessity of its repetition quickly increases, that the fluid reaccumulates rapidly, and the intervals at which the operation is performed decrease according to the number of the operations.

This fact is universally acknowledged; but an interesting case has been published by Mr. Cæsar Hawkins, where the number ofappings are mentioned and the date of each recorded, proving very clearly my previous assertion.

TABLE (No. 10.)*

Shewing the decrease of the intervals between each operation, and the increase of the fluid secreted.

Operation.	Date.	Pints.	Intervals since the previous operation.
1st	November 1830	32	
2nd	February 1831	30	3 months
3rd	May	30	3 "
4th	Aug. 20, "	40	3 "
5th	Oct. 18, "	32	59 days
6th	Dec. 8, "	48	51 "
7th	Jan. 18, 1832	48	41 "
8th	March 3, "	48	44 "
9th	April 14, "	50	42 "
10th	May 20, "	50	36 "
11th	June 26, "	52	37 "
12th	July 30, "	50	34 "
13th	Sept. 3, "	56	35 "
14th	Oct. 10, "	56	37 "
15th	Nov. 19, "	56	40 "
16th	Dec. 22, "	57	35 "
17th	Jan. 24, 1833	58	33 "
18th	Feb. 26, "	59	33 "
19th	March 30, "	63	32 "
20th	April 30, "	63	31 "

"It will be seen," says Mr. Hawkins, "from the preceding table that the operation was required twenty times in two years and a half, there being drawn off on an average about forty-four pints of fluid; the smallest quantity at any one time having been thirty pints, and the largest sixty-three pints, the whole quantity being 978 pints. It will be observed also that in one year the operation was performed eleven times, the average quantity being about fifty-six pints, and the longest interval between any two operations having been forty days; the whole of the fluid taken away amounting to the immense quantity of 620 pints in one year." . . . Notwithstanding the immense quantity which was thus formed, she did not until the last few months lose flesh, nor was her general health much disturbed, neither did the immense size of the tumor cause any swelling of the lower limbs."

Another fact is observed in this table, and that is the gradual

* *London Medical Gazette*, July 6, 1843.

increase of the fluid after the first tapping, and the gradual decrease in the length of the intervals after each operation: thirty-one pints of fluid being taken away at the first, sixty-three at the last tapping, while the interval was three months between the first and second, and only thirty-one days between the nineteenth and twentieth.

From these observations we therefore find that, taken at its best, tapping is a very dangerous means of palliating ovarian dropsy; that when it is had recourse to, it will have to be frequently repeated; that the relief afforded between each operation will become gradually less, and the dangers consequently greater. This then is a valuable argument in favour of some other means of treating ovarian dropsy.

2. *What are the results of the operation already performed?*
—Dr. Blundell, about ten years ago, instituted a number of experiments to shew that the peritoneum might be opened with comparative safety, and stated it to be his opinion that abdominal surgery would be better understood, and that the extraction of the ovary would become a legitimate operation, at a future period. The abdomen since that time has been opened more than 118 times, and the accompanying tables shew the results of the operations.

The operation first practised consisted in making an incision from the ensiform cartilage to the pubis, breaking away every obstruction and taking the tumor from the cavity of the abdomen. Many difficulties arise in this proceeding from accidental causes, which render this otherwise simple operation one of great danger. And the question arises, whether the danger attached to the operation does not supersede the benefits arising from it, and whether we actually have a new remedy for ovarian dropsy?

I have carefully collected into a tabular form all the known operations for the extraction of the ovary, and you will observe that the number is greater than in any of the published records; but we must be cautious in our judgment. We may rest assured

that we have all the successful cases, but have we all those which have been unsuccessful?*

To this query, those who have published on the subject give a negative answer. Mr. Philips states, "I have heard particulars of other five cases, of which, at least, three were unsuccessful; but I cannot venture to use them. As any honourable man should be equally ready to publish his unsuccessful cases, we may look for the authentic particulars hereafter." This opinion is confirmed by Dr. F. Bird, who says, "It was deeply to be regretted, that the profession were unable to form any correct opinion on the subject (Ovariectomy) from motives that could not be too strongly censured. Unsuccessful operations had been most carefully suppressed, while those in which a happier termination occurred had been hurried into publicity even before the patient had been fully recovered, and whilst the ligature was still contained in the abdominal cavity. . . . Within these last few weeks the abdomen of a patient had been laid open, in which no tumor was contained; in another example in which the operation had been performed, death had been ushered in with all the symptoms of strangulated intestine; in another, in which the abdominal section had been employed, the patient had quickly died: yet were all these cases carefully concealed, while those in which recovery had taken place were made the subject of daily advertisement." I myself am aware of two cases—one in which no tumor was found, and the other died shortly after the operation—which have never been published, and of which I could obtain no authentic records. As long as such a spirit as this remains in the profession, so long must we hope in vain to come to a correct conclusion; for the deaths, not recorded, would make a material difference in the already nearly equal results.

We will now examine Table (No. 11).† It appears that there are 114 cases of gastrotomy, of which 74 have recovered and 40 died, making one death‡ to three recoveries nearly. Of

* See Table (No. 11). † *Appendix*. ‡ One death to $2\frac{3}{4}$ recoveries.

these patients 89 had the tumor removed, in 18 it was not extracted, and in 6 no tumor was found.*

In the above statement we observe that the mortality is very large, as far as the operations at present are concerned and taken indiscriminately; but what astonishes us the most is the number of cases where the diagnosis has been such as to compel the surgeon, after the operation had been commenced, to abandon it. It occurs twenty-four times, or once in less than five cases.

This is one of the most serious objections to the operation, (and this difficulty of exact diagnosis is well understood by the practical surgeon), that we should be liable—and we are as liable as Lizars, Clay, Walne, Dieffenbach, West, &c.—to make an incision in two out of eight patients from the ensiform cartilage to the pubis, and then find either that the tumor is unable to be removed on account of the adhesions it has contracted to the neighbouring viscera, or that no tumor is to be found. In six of the twenty-four cases this latter circumstance took place; and we feel surprised that *the* medical men who were connected with these operations should have fallen into error, or at any rate should have performed an operation of such consequence when the diagnosis was so very obscure.

A patient came to me to ask my opinion of a tumor of the abdomen, which she had been told was connected with the womb or its appendages. I made an examination, and really found no difficulty in telling her that there was no tumor at all, but that the bowels were enormously and peculiarly distended. Percussion in this case gave every sign of a hollow cavity from the resonance emitted on its application: the stethoscope revealed to me the loud gurgling sound of the intestines passing to and fro in rapid confusion: the uterus was healthy and in its natural position, as ascertained by the uterine sound. I may suggest that these physical means of diagnosis are of the highest importance in these cases; and if they were more understood, we should hear no more of the abdomen being opened to display the healthy intestines.†

* See Tables (No. 14) and (No. 15), *Appendix*.

† See Case No. 8.

If there is distinctly tumefaction of the abdomen (and this often occurs) and any doubt exists upon the subject, the examination should be a prolonged one and shortly repeated: for we frequently find that hysterical patients, in whom this kind of disease exists, are often thrown off their guard by conversation or by directing their attention to some other subject, and then the semblance of a tumor disappears. Dr. Churchill* relates a case referable to this subject: he says, "Very lately I was consulted for a supposed ovarian tumor, and upon examination there was a distinctly shaped abdominal tumefaction, which had all the feel of a uterine or ovarian tumor, and yet on calling off the patient's attention, and setting the abdominal muscles into action, it entirely vanished."

It is fortunate that these six patients only suffered the pain of the operation, as they all recovered.

This operation has been stated to have a less mortality than other of the acknowledged capital operations; and this I believe to be true, as we find that 5 in every 15, or 1 in 3, only died from its application, while others rate a mortality of 5 in 10 or 1 in 2.

Malgaignet† has shewn that out of 852 amputations of the extremities of all kinds (including those of the fingers and toes) which were performed in the Parisian hospitals from 1836 to 1841, 332 died, or about 4 out of every ten proved fatal.

Among these, out of 201 amputations of the thigh, 126 died, or 6 in every 10: out of 192 amputations of the leg, 106 died, or $5\frac{1}{2}$ in every ten; out of 91 amputations of the arm, 41 died, or $4\frac{1}{2}$ in every ten.

Of the amputation of the thigh, in 46 cases the operation was performed for severe injury of the limb; of these, 34 died, or more than 7 out of every 10.

At Glasgow Infirmary the mortality in cases of amputation is 4 in every 10, and at the Edinburgh Infirmary 5 in every 10.

* *On the Principal Diseases of Females.*

† *Medical Gazette*, July 10, 1846—Mr. Solly's *Clinical Lecture*.

Mr. Philips has collected the histories of 171 cases in which the large arteries were tied; of these, 57 died, or about $3\frac{1}{2}$ in every 10. Sir A. Cooper, in his work on Hernia, records 36 deaths among 77 operations for that disease, or nearly 5 in every 10 died.

These are a few of the larger operations where statistics have been recorded, and we find that most of these have a greater mortality than that of ovariectomy; but I hardly think that this is a fair comparison, because in the ordinary operations there is a necessity compelling you to act immediately (in many cases) whatever may be the coexistent circumstances, whereas in cases of ovarian dropsy the health of the patient may be good: many live a considerable period, on an average four years; but if the operation is fatal, it is so within a few hours.

The average mortality, thus given from the Table No. 11, is composed of all those cases in which the abdomen was opened, but many of these were unnecessarily subjected to the operation; this occurred in nearly 1 out of 5 of all the cases, many of which recovered. I find that in the 90 cases where the tumor was actually extracted, 57 recovered and 33 died—nearly one in three; and it is on this number we should rely for information as to the actual value of the operation. It would be folly to class those operations with the successful ones where no tumor was found, for they only prove that patients have survived a dangerous operation, but not that that operation was beneficial.

Of the 24 patients where the operation was performed and the tumor not removed, or where there was no tumor found, 17 recovered and 7 died, or about 1 in $3\frac{1}{2}$. The mortality was greater in the 18 cases where the tumor was not removed, 6 having died and 12 recovered; but these recoveries were only from the operation, and not from the disease, that remaining in the same or a worse condition.

In all the above cases the extraction of the tumor was prevented by the existence of extensive adhesions, or the tumor was omental or uterine. And if we return to the table we shall find, that of the whole number 114, in 27 the fact is not men-

tioned, and in 6 there was no tumor, reducing the number to 86 cases, in 46 of which adhesions were present, and in 35 they were absent; making the existence of adhesions as more than 1 in 2.

This same tendency to the formation of adhesions has been observed by morbid anatomists, in cases where the operation has not been performed. In 14 cases where the *post-mortem* examinations were carefully performed by Dr. Macfarlaine*, he says, "In 12 of these cases, adhesions, more or less intimate and extensive, existed between the tumors and the parietes and viscera of the pelvis; 3 of which had likewise become adherent to the abdominal parietes omentum and intestines. Only 2 were free from preternatural adhesions, and in these the tumors were attached to the broad ligament by a slender pedicle. In three of the twelve cases, it appeared that the adhesions could have been divided without much difficulty; but in the remaining nine the procedure was altogether impracticable, and could not have been accomplished without imminent danger to all and certain death to some."

Of the 46 where adhesions existed, 29 recovered and 17 died, or 1 to nearly 3;† whereas where there were no adhesions, 24 recovered and 11 died, or rather less than 1 death to 3 recoveries.‡

Adhesions connecting the cyst to the parietes of the abdomen or viscera are then serious complications, and their correct diagnosis is of the greatest importance. Are there any means by which this complication can be ascertained? If we study the experience of the past, I fear we shall come to the conclusion that this complication cannot be accurately ascertained before the operation; for operators the most cautious and skilful have been deceived, and adhesions found in cases where they have been least suspected. But there are some presumptive signs, which after a careful examination may become very valuable.

When an ovarian sac has attained a size which is productive

* Dr. Macfarlaine's cases in the *Lancet*.

† 1 death to $2\frac{1}{2}$ recoveries.

‡ 1 death to $3\frac{2}{11}$ recoveries.

of great inconvenience and distress to the neighbouring organs, the parietes of the abdomen become greatly attenuated, and the space between the two recti abdominalis is much enlarged: this is well seen if the patient be told, while lying on her back, to raise herself into the sitting posture without the assistance of her arms; and if the sac within be free in its motions it will immediately be protruded through the space between the two recti muscles, and produce an oval enlargement; but supposing the cyst to be intimately adherent in front, no such bulging will take place.* I have tested this sign in several cases, and noticed the truthfulness of it. About the same time two cases of a very different nature came under my notice. The one was a unilocular cyst, the other a multilocular one. We were anxious to obtain a knowledge of the existence of adhesions. In the first case the bulging was distinct and evident. She was tapped *per vaginam*, and the tumor entirely disappeared from the abdomen, proving indisputably that no adhesions existed. In the other case this sign was absent, and the whole abdomen moved with the tumor. The patient shortly died, and on the *post-mortem* examination the tumor was found extensively attached to the parietes and viscera of the abdomen.

Another symptom of this sort is valuable, and that is the action of the diaphragm upon the tumor. If the measurement of the abdomen be obtained after the patient has taken a deep inspiration, and again after a full expiration, you will find, when the cyst is free, that the two measurements frequently vary an inch, sometimes more; shewing that the diaphragm in the inspiratory movement had driven down the unattached cyst, while it being free, the expiratory effort allowed it to repossess its original position in the abdomen.

Again, by placing the hand upon the abdomen, and with the fingers kneading the parietes, you may frequently find that the movements of the cyst are unconnected with those of the abdominal walls: and this is much more marked when an

* Dr. F. Bird first pointed out this sign to me; I have since observed it in several cases.

ascetic fluid is present; here also a sudden tap will allow the fingers to come in contact with a hard substance below, proving that a space exists between the tumor and walls. When ascites is present, the sac is usually free from adhesions.

The position of the pelvic viscera gives great assistance to the elucidation of the existence of adhesions. If the bladder is free, and after being emptied is blown up through an elastic catheter, it will pass above the pubis, and can be detected by the resonant sound it produces on percussion; proving that no adhesions in that position prevent its ascent. The uterus too may be perfectly free, and can be thrown by the uterine sound on to the rectum; shewing that the cyst is unconnected with it. But in one case I examined, I found the uterus was fixed between the tumor and pubis, and its cavity elongated by the right horn of its body being drawn up by the tumor, making us suppose during life that the uterus was diseased; whereas a *post-mortem* examination proved it to be quite healthy and unattached.

Another important test of the existence of adhesions is tapping. If there be any doubt of this complication before the operation of extraction is recommended, the patient should be tapped a few weeks previously to the operation: by this means you are enabled to ascertain the fact whether adhesions exist or not, especially when they are situated on the anterior parietes of the abdomen. On the withdrawal of the fluid, the walls of the abdomen are observed to follow closely the contracting cyst, when adhesions are present, and have externally a drawn-in and puckered appearance, while the cyst does not descend into the pelvis; whereas, when the cyst is free from adhesions, it may be found after its evacuation low in the pelvis, forming a hard tumor at the lower part of the abdomen, while the walls of the abdomen may remain free. After you have obtained this information the cyst may be allowed to refill, and its extraction proposed. I have seen lately a beautiful case of this sort, and by the means already described we detected adhesions and solid matter. The patient was tapped as an explorative measure, and two pailfuls of dark albuminous-looking fluid was

discharged. The walls of the abdomen were distinctly seen to follow the contracting cyst. A solid mass which was present proved that the cyst was unable, from the adhesions, to pass into the pelvis, for it remained stationary on the left side of the umbilicus.*

Adhesions are supposed to exist if the "crepitus," pointed out by Dr. Bright, is present. But they may exist and no such sensation be produced; they are stated to be indicative of recent deposit and a certain peculiar existing state. Mr. Southam thinks that, in order that the crepitation should be produced, it is necessary that fluid should be present, and a case occurred to myself that tends to confirm his opinion. "This sound," says he, "I believe depends upon a small quantity of fluid between the adhesions; for when ascetic fluid has been absent, I have not been able to detect it, though very extensive adhesions have afterwards been found." In some cases this sign is very distinct, while in others it is not so. In case No. 6, it was so sensible as to be observed, and so loud as to be *heard*, by the patient herself; it was confined to certain portions, and did not extend over the whole tumor; it appeared to be spontaneous, as she never had had any thing like an attack of peritonitis. One singular circumstance deserves notice, that it entirely disappeared a few weeks before she was tapped, after the cyst had acquired such a size as to require that operation. She died twenty days after the operation, from inflammation of the sac and peritoneum; but there were found old adhesions scattered over the surface of the tumor, connecting it with the abdominal walls. Did the cessation of the crepitus cease on account of the absorption of fluid consequent on the enlargement of the sac?

It has been thought that the history of the case would throw

* Dr. F. Bird has introduced a very ingenious instrument into practice, in order to determine the existence of adhesions. It consists of a thin square piece of ivory, in the lower edge of which are placed two supports (needles), which are thrust into the abdominal walls and carried through those of the cyst. If adhesions exist, this little piece of ivory remains stationary during breathing; but if the cyst be free the motions are very rapid, and laughing causes them to be more so, producing a ridiculous effect.

some light upon the existence of adhesions, that they might be traced to some inflammatory attack, and that after such an attack they were to be apprehended. Mr. Philips says, in an admirable article on the subject, that "the crepitating sign pointed out by Dr. Bright, is only present when the adhesions were recent; and as to the motion of the tumor with the diaphragm, considerable adhesions may exist without much interfering with it. An examination *per vaginam* would not set the question at rest. Our main reliance is therefore upon the signs of peritonitis: if the evidence be clear that peritoneal inflammation had existed, it is probable that adhesions are present; but we may find adhesions where there has been no reason to suspect peritonitis. Still extensive adhesions in the absence of symptoms of peritonitis are by no means common. . . . It is then mainly upon this point that we must rely before proceeding to operation."

As Mr. Philips observes, there are many cases where extensive adhesions exist, which have not been preceded by any symptoms of inflammation; so also there are cases in which the inflammatory symptoms have run high, and yet have not produced adhesions. Mr. A. W. Domville, of Manchester, has recorded several cases to illustrate this fact.* In one, an old lady had suffered from ovarian dropsy for thirty years, complaining of nothing but distension, and who had never been laid up with inflammation; yet, on a *post-mortem* examination, the cyst was found to be extensively adherent to the parietes and viscera of the abdomen. In speaking of this case he says, "It is a remarkable circumstance that there should have been such extensive adhesions in this case; for I cannot learn that there had been during its progress any decided symptoms indicative of peritoneal inflammation." Again he says, "I lately attended a case where there was great and excessive pain in the abdomen; and the operation of tapping was performed every four or five weeks. She died; and on examination no adhesions were found." Dr. F. Bird also, in speaking of a

* *London Medical Gazette*, Nov. 26, 1842.

successful case, says, "With reference to the peritoneal adhesions in this case, it may be briefly said that there was no evidence of their presence prior to the operation; and the previous history was completely opposed to the idea of antecedent peritonitis. It may, however, be justly questioned, whether much importance ought to be attached to the negative evidence afforded by the previous history on this point: there can be little doubt that peritoneal inflammation does frequently occur in the progress of ovarian disease to a sufficient extent to give rise to the formation of adhesions, without being manifested by local pain, or other of those symptoms which commonly indicate the existence of serious inflammation."

From these cases and observations we clearly see, that not much actual dependence can be placed upon the fact that inflammatory symptoms have occurred; nor does the absence of them secure immunity from this complication.

The size of the cyst, and consequent pressure on the surrounding parts, cannot account for adhesions being present, since we know that ovarian sacs of equal size or greater magnitude may exist, although no such morbid connexions are formed.

The mobility of the tumor was considered indicative of the non-existence of adhesions. This is always a very favourable sign, and shews that the tumor is not *closely* connected with the surrounding tissues; but extensive adhesions may exist even in this state. Dr. Clay, in his second case, met with this difficulty: he found the tumor quite moveable in all directions, except for a few inches anteriorly, where he supposed it to be adherent; but, on making the incision for the operation, the tumor was found to be adherent in all directions. He remarks on the case: "No sooner was the tumor exposed, than adhesions presented themselves in every direction. In the diagnosis which Dr. Radford and myself had formed of the case, I fully expected an extensive and long-standing adhesion to the anterior of the tumor immediately in the vicinity of the umbilicus; but from the mobility of the tumor in every

direction—save the exception mentioned—we thought it pretty free elsewhere. In this we were deceived: adhesions were formed in almost every part, remarkably strong, and only to be separated with the scalpel. There was also a decided difference in the character of the adhesions: those attached to the parietes were broad, and firm in their attachments, whilst the connexion with the viscera was by numerous long fibrous bands. It was evidently their length and adhesion to the moveable parts that gave the tumor the mobile character it had.”

From these observations we find, that all the usual signs by which we endeavour to discover the existence of adhesions are not always to be relied on. If the tumor protrudes between the divided recti, it does not indicate the absence of adhesions *posteriorly*, although it may be depended on as far as the anterior surface is concerned.

The increase and decrease of the tumor, corresponding with the actions of the diaphragm, is unable to detect the adhesions to the various viscera, although it is a favourable sign. The history of the patient does not add to our knowledge; for we find that inflammatory symptoms may exist to a great extent and not produce adhesions, whereas they exist where none of these symptoms have been present. The crepitus pointed out by Dr. Bright is a valuable indication of adhesion, yet it does not always exist, and requires particular circumstances to aid its development. And last of all, even the mobility of the tumor is not to be depended on, for it may be readily pushed from one side of the abdomen to the other, and yet there may exist adhesions so strong, that they require a scalpel for their division.

But, although the dependence on these symptoms singly may lead us into error, the combination of many of them will generally be conclusive, supposing the patient, when rising by her own exertions, protrudes the cyst as an oval bulging tumor through the space left by the separation of the recti. That on a deep inspiration the tumor is pressed downwards

more into the cavity of the abdomen, and then recedes on an expiration; that the bladder is free, and can ascend into the anterior part of the abdomen when filled with air; that all crepitation is absent, and the tumor tolerably moveable: then we may with satisfaction say that adhesions do not exist. Another additional evidence would be, if the patient had been previously tapped, and the sac had entirely disappeared after the operation.

Some state, that after tapping the sac usually adheres to the puncture of the parietes; but this is not correct. I have observed this point at several *post-mortems*, and have not at present found it to be the case. Some patients have come under my notice who have been tapped several times previously to taking my advice, and in them the sac has disappeared as entirely after the operation; proving that no previous adhesion existed.

Besides the complication of adhesions, another important point ought to be borne in mind in the treatment of these tumors, and that is, the frequent occurrence of other organic diseases. If we refer to Table of Cases (No. 11), we shall find that several of the viscera were greatly diseased, and consequently in those cases the operation ought not to have been performed. The average proportion is one in seven cases; and where such complications existed the mortality was thirteen in seventeen. The particular diseases were the following:

2 cases, in which both ovaries were affected; the larger ones were removed and the two smaller ones left, although diseased.

8 cases, in which the uterus was diseased.

- | | | |
|---|---|---|
| 1 | " | the stomach was diseased. |
| 1 | " | the bowels were ulcerated. |
| 1 | " | had chronic peritonitis. |
| 1 | " | the liver was tuberculated with scirrhus mesenteric glands. |
| 1 | " | the tumor was omental. |
| 1 | " | exhaustion existed before operation. |
| 1 | " | there existed a shattered constitution. |

Of these seventeen patients 13 died, 2 had a diseased ovary left, and 2 recovered who had had uterine tumors removed.

In all these cases, then, the operation of ovariectomy ought not to have been performed; and the results prove the correctness of this statement, 13 having actually died, and the other 4 not cured of their disease, the ovaries being liable to enlargement, and the uterus being in a diseased state, for we rarely find only one uterine tumor.

The operators in the above cases could not have been aware of these complications before the operation, or they would not have undertaken them. In these the diagnosis was not accurately ascertained, and consequently the result was fatal.

The causes of death in these operations have been particularly noted in 29 cases: the following is the result.

10 patients died from hæmorrhage, either immediately or in a few hours.		
10	"	from peritonitis.
1	"	from gangrene of the intestines.
1	"	from gangrene of the peritoneum.
1	"	from peritonitis with gangrene.
1	"	from inflammation of the mucous coats of the bowels.
2	"	from the shock of the operation.
1	"	from exhaustion 32 hours after the operation.
1	"	from a tumor of the uterus resting on the incision.
1	"	from ilius and phlebitis of the crural veins.

29

So that 10 patients died from the immediate danger of the operation, 12 from the inflammation of the viscera consequent upon it, 2 were destroyed by the shock to the constitution, and the others from unavoidable circumstances.

The causes of death after the operation are important, as they point out some of the dangers to be expected in undertaking this mode of treatment, death being caused in almost every case by the effects of the operation itself.

When patients who have submitted to this operation die, their dissolution is very rapid. In ovarian dropsy two years is the average time, under the ordinary treatment, to live, but occasionally much longer; while, if they submit to the operation,

they may not survive a few weeks, and much more frequently a few days or hours. The exact time of death after the operation in the forty unsuccessful cases is mentioned in thirty, and is as follows :

2 cases died immediately after the operation.

1 " 4 hours afterwards.

1 " 8 "

1 " 11 "

1 " 16 "

1 " 17 "

1 " 30 "

1 " 32 "

5 " 36 "

1 " 2 days "

2 " 3 "

1 " 5 "

5 " 6 "

2 " 7 "

1 " 9 "

1 " 10 "

1 " 3 weeks "

1 " 6 "

1 " 10 "

30

So that we see that 14 cases died within thirty-six hours of the operation, 25 before the seventh day, and in 5 cases the time varied from nine days to ten weeks.

The *character of the disease* for which gastrotomy has been performed varies considerably, but has an important influence as to the result.

Of the 114 cases,

65 cases were encysted tumors of the ovary.

16 " solid tumors.

6 " uterine tumors.

1 " omental tumor.

1 " the cyst of an abscess of ovary.

6 " no tumor found.

19 " the particular disease not mentioned.

114

Of the 65 cases of encysted dropsy,

44	recovered.
21	died.
<hr/>	
65	or 1 in 3.

Of the 16 cases of hard tumor,

9	recovered.
7	died (or nearly half).
<hr/>	
16	

Of the 6 cases of tumors of the uterus,

2	recovered.
4	died.
<hr/>	
6	

From these tables we find, that the character of the tumor is of great importance to the result of the operation; consequently the correct diagnosis in the disease is of the utmost value. We find that the extraction of cystic tumors is much safer, and presents less risks than hard and sometimes malignant ones. The mortality in the former is one in three, while very nearly one half die who are operated on for the latter disease. This leads us to the conclusion, that cystic tumors are much more favourable to the operation than hard and fibrous ones.

It appears that six uterine tumors have been operated on by the section of the abdominal walls; in the generality of cases they have been mistaken for ovarian dropsy; but in some few cases they have been operated on with the distinct knowledge of the nature of the tumor.* The results of the operation have been four deaths to two recoveries: one of these had a very narrow escape from great hæmorrhage, and in the other it was not removed, although the patient recovered.

Dr. W. L. Atlee, an American physician, thinks that gastrotomy is not only justifiable for the extraction of ovarian cysts and tumors, but also for any other tumor of the abdomen, more especially tumors of the uterus. He says, "Fibrous

* See Dr. Clay and Dr. W. L. Atlee's Cases.

tumors, growing from the peritoneal surface of the uterus, sometimes reach to an enormous size, and, from their solid character, are likely to impede the functions of adjacent organs more than an ovarian cyst. Indeed death has even been produced by injuries to the viscera interposed between the enlargement and the parietes of the abdomen. The same circumstances, likewise, calling for extirpation of the ovaries, obtain here, and the removal of such tumors must be equally legitimate.”*

We cannot agree with this gentleman in his remarks. We should be extremely sorry to place our patient under the dangers of gastrotomy to remove a tumor, known to all to be one of *slow growth*, and not actually detrimental to life; we should pause before we exposed our patient to the dangers of extensive and hardly to be suppressed hæmorrhage, which has killed two cases of those already operated on, and was excessive in his own. We think we should pursue the wiser course followed by Dr. N. Smith, who, on finding, during an operation of gastrotomy, that he had a tumor of the uterus instead of an ovarian cyst “to deal with”, he closed the incision as quickly as possible, and his patient recovered. Although this case of Mr. Atlee’s is a successful one, that gentleman must recollect that it is the only successful one; and even this patient nearly lost her life from the great bleeding consequent upon the operation.

We think the advice of Dr. Churchill ought to be followed in these cases; where he says, “Again, it is clear that no operation of this magnitude should be attempted when there is coincident organic disease of a serious character in other organs; nor have we sufficient evidence to justify an extension of the operation to other diseases than those of the ovaries.”†

Is Ovarian Dropsy a malignant disease?—Upon this subject there are many opinions. The unilocular cyst is decidedly unconnected with cancer, but the multilocular sometimes pre-

* *American Medical Journal of the Medical Sciences*, April 1845, p. 325.

† *Churchill on the Principal Diseases of Females*.

sents appearances very similar to colloid disease; however, the usual train of symptoms accompanying cancer is never observed in these cases. Then, is the cystic ovary malignant? Drs. Bright and Hodgkin believe it to be so; and Mr. B. Cooper says, "There can be no doubt but that malignant growths in other viscera frequently coexist with ovarian cysts; and also, that sometimes the small ovarian cysts themselves assume the cribriform appearance. . . . Of 50 cases examined (*p.-m.*), I find that 8 had malignant disease in some other part of the body, and that in 13 both ovaries were affected; and that the left ovary was more frequently diseased than the right." That one patient in six should have the complication of malignant disease, is hardly a decisive argument to establish the malignancy of cystic tumors. Malignant disease may attack those who are labouring under ovarian dropsy as well as others.

Whatever may be the appearance of the complicated structure of ovarian tumors, we never have them producing the effects of malignant disease; nor can they be recognized by their symptoms. There is not a case on record where the colloid-looking portions of the cyst have spread to or communicated disease to neighbouring tissues. The cysts may become adherent to the viscera of the abdomen, and discharge their contents through the cavities of each for years, without producing in them any morbid change resembling cancer. The tumor itself may be removed, and cancer has never been found to reappear in the pedicle. The symptoms which accompany these growths are not those of cancer; they may continue for years, and then only kill from their encroachment on vital viscera. Mr. Southam says on this subject: "The only foundation for attributing malignancy to the encysted ovarian disease, appears to consist in the presence of the solid masses sometimes forming a part of the tumor, or growing from the internal surface of the cysts; which, on a superficial inspection, not unfrequently resemble the semi-transparent and fibrous structures of scirrhus, or the cribriform or fungoid appearance of medullary sarcoma, but any further they do not

appear to assimilate. The peculiar appearance of the countenance, the sharp lancinating pains, and the other general conditions of the patient, which denote the existence of scirrhus, seldom occur in persons suffering from the true ovarian disease. The ulcerated surfaces of the tumor present no hard, ragged and everted edges; the indications of hæmorrhage having previously existed are wanting. The fluid part bears a large proportion to the rest of the structure, and instead of assuming the character of an offensive, ichorous discharge when of a purulent nature, it has the appearance of ordinary pus. Cysts have been frequently found, after death, connected to the ovary, which had not been detected during life; and there are several authenticated cases of extremely large tumors, with equal and smooth surfaces, having existed for many years without affecting the healthy functions of the body, which generally suffer more or less when there is any tendency to malignant action.”*

From the consideration that the health is so little affected, although the existence of the disease is of long standing, from the disease not affecting the contiguous structures, and from the patient being free from all the ordinary signs of cancer, I must agree with Mr. Southam in thinking, that the encysted ovarian disease is not malignant.

I am bound however to state, that I have seen cases of ovarian dropsy complicated with cancer, and that that disease has terminated the life of the patient. I have also seen cases where the ovarian tumor has increased so rapidly, and had such a decided effect upon the constitution of the patient, as to destroy her in a few weeks; and have observed in such cases an encephaloid or colloid state of some of the cysts composing the tumor: but I do not think that this is sufficient to establish ovarian dropsy as a malignant disease; and I firmly believe, from the reasons given above, that in the majority of cases it is of a benign character.

SECT. *The different modes of operating in Ovarian Dropsy.*—

* *London Medical Gazette.*

For a moment we will suppose that the operation of ovariectomy is justifiable and practicable in some particular cases. Which operation ought to be performed—the major or minor one? In the following remarks, deducible from the Tables I have drawn up, I have classed all those operations where the incision varies from two-and-a-half to six inches, as coming under the denomination of the minor; while where it exceeds six inches, the title of the major operation is fully justified. The more marked distinction between these operations is, that in the former the cyst is always tapped before it is extracted, to reduce its bulk, and brought through an incision sufficiently large to allow it to pass; while the major operation consists of a long incision from the first, through which the whole untapped tumor is protruded.

These two modes of operating have divided the operators into two classes—those who favour the large or original incision, and those who favour the small or later innovation. The arguments of those holding the former opinions appear very plausible, although the results from statistics are not so favourable as those which arise from the smaller operation.

The advantages of the “large section,” or major operation, are said to be, that there is sufficient space for the operator, in which he can perform all his manipulations; that the adhesions can be seen and cut through by the scalpel without being torn by the hand of the operator; that the cyst can be removed entire from the abdomen, thus preventing the escape of fluid into its cavity—which circumstance is said to be a great source of mortality in the minor operation; that the fleshy masses connected with the cysts can be removed without difficulty, whereas in the minor operation they cannot be removed at all; and that another advantage of this mode of operating is, if any blood or fluid escape into the cavity of the abdomen, they can be removed without injury, and not allowed to remain, which is almost inevitably the case in the minor operation.

The objections raised to the major operation are, that in the majority of the cases the incisions are unnecessarily long; that the same end can be attained by milder means; that the extent

of peritoneum exposed is more liable to the effects of inflammation; and that there is a greater liability to the escape of the intestines, and consequently a greater tendency for them to take upon themselves inflammatory action.

Dr. Clay, speaking of the advantages of the major over the minor operation, says, "Every person who has paid attention to this subject, knows how very obscure the symptoms of ovarian disease often are, and how very difficult it is to form a correct diagnosis as to the particular state of the tumor; adhesions have been found where none had been anticipated, and where absent, were confidently expected. It is often difficult to say to which side the pedicle is attached; equally difficult to say if the tumor contains one or more cysts; and impossible to tell if any part of the tumor be consolidated or not. By the large incision, whatever difficulty presents itself, we are prepared for it; it matters not on which side the pedicle may be, there is plenty of room for cutting asunder the adhesions, however numerous; the whole mass may be removed entire without puncturing the cysts, thus avoiding the disagreeable circumstance of the fluid of the cyst escaping into the abdominal cavity, perhaps one great cause of death in the minor operations; and lastly, we have now abundant proof that peritoneal inflammation is not a whit more excited by a bold opening than by a smaller one. It must also be borne in mind, that the tearing away of the adhesions, unless very recent ones, is entirely avoided by the operation of the large incision."

Mr. Walne, another advocate for the large incision, uses somewhat similar arguments: he says, "My reasons for performing the operation by the large section are these—that it does not appear that a less extent of wound diminished the danger of the operation in any material degree; and that the complications which are occasionally presented, without being foreseen, in many instances, can be better appreciated and more suitably dealt with by the surgeon through a free opening than through a small one. For example, the effusion of blood, or

the escape of fluid from the cyst into the peritoneum, either of which is a most dangerous complication of the difficulties inseparable from any method of operating, can with no certainty be avoided in the minor, but may assuredly be remedied if they should occur in the major operation. Adhesions too can be divided, the parts can be cleaned and arteries tied with facility, if necessary, and the operator's mind freed from doubt as to the state of the internal parts before he carefully closes the wound. These are circumstances which the experienced operator can appreciate, and if he should not be blinded by an undue appreciation of peritoneal inflammation, he will be sure to estimate highly such palpable advantages."

The principle of the small or minor incision is to make as small an opening as possible through the parietes of the abdomen and peritoneum; seize the sac with a valsellum, so that it should not recede when it is tapped; then puncture the cyst and evacuate the fluid, draw the sac through the opening, tie its pedicle, and detach it. This operation is admirably adapted to that form of disease where the cyst is single and uncomplicated with fleshy matter, and in a great many cases this point can be pretty readily ascertained; but when adhesions to any extent exist, when the sac is multilocular, or when there is a large quantity of hardened substance, it would be impossible to withdraw the sac through a small opening.

Mr. Jefferson, of Framlingham, was the first person in this country who adopted the small incision. In 1833 he operated successfully on a patient (Mrs. B.); the incision he used was about $2\frac{1}{2}$ inches long; and after evacuating the fluid with a trocar, the sac was drawn through the incision, and a ligature applied to the pedicle; the cyst was then removed. This mode of practice has been followed by King, Lane, West, Philips, and Bird, with several others.

Dr. F. Bird has been successful in six (viz. all) of his operations: his reasons for preferring it are the following. "Whilst according in the disadvantages said to attach to the small abdominal incision, I cannot but believe that important objec-

tions apply with equal justice to the very large section, the chief of which, undoubtedly, is the question of necessity. Is an incision from the pubis to the ensiform cartilage, in cases in which the ovarian tumor is wholly or in part fluid, really required? There can, I conceive, be no valid objection to evacuating the fluid contents, either partially or entirely, and thus causing so great a reduction of bulk as to allow of the removal of the ovarium through an opening of less size than that constituting the major operation; for if an incision be made sufficiently large to admit of the cyst rising out of the abdominal cavity without any forcible traction; if it also be sufficiently large to allow of the introduction of the hand of the operator into the abdomen, and thus enable him to apply with facility the necessary ligatures, or remove any abdominal attachments to the pelvic viscera, every end is answered, every indication fulfilled; and the making a large peritoneal section can confer no further benefit on the patient, unless the removal of an unpunctured cyst can be deemed such. It may be urged that a large incision into the peritoneum is less likely to be followed by inflammation than a smaller one, and this I am by no means disposed to deny; but were it proved, it would still be very questionable whether an operator would be justified in making an unnecessarily large incision solely with a view of enhancing the probabilities of ultimate success. I would not, however, dissent from the employment of a large incision in cases in which the partially solid state of the tumor might prevent its sufficient reduction by puncture; but, from the cases I have seen, I am inclined to believe that it rarely happens that an ovarian tumor will not be found to be in part fluid, and therefore capable of being lessened in size by the introduction of the trocar."

When there is fluid in the sac I deem it to be incumbent on the operators to evacuate and reduce the tumor to the smallest size possible; but, of course, when the cysts are numerous, and there are hardened masses in their walls, the minor operation will not succeed; but the incision must be

enlarged, and the operation terminated by the major one. I saw a case lately where these indications were followed out, for when the operator cut through the peritoneum, a large tumor was found, composed of a number of cysts, each holding half-a-pint of fluid; many of them were punctured, and in some the fluid was too thick to be discharged, except by a large incision; consequently he was compelled to make a larger incision.

Dr. Clay thus remarks upon the advantages of the major over the minor operation. He says, speaking of a successful case by the large incision, "In these symptoms there are some points so decidedly opposed to the mode of operation proposed by Mr. Jefferson, that I cannot avoid drawing a comparison. If it were positively certain that the ovarian tumor was composed of only one, two, or three cysts, provided they could be defined and punctured; if it were equally certain that no adhesions existed beyond the pedicle; and if we could be assured that no part of the tumor was consolidated, then I should say that the minor operation of Mr. Jefferson would be the only justifiable one; but if any of these objections exist, I am decidedly of opinion that we had better let the patient alone."

We are now able to judge of the advantages of these operations from the arguments of their advocates; each possesses its advantages, and each has its defects. It would be folly to prolong an incision for the mere sake of using the scalpel, when the tumor can be extracted without such prolongation; and it would be still greater folly to endeavour to withdraw a cyst by force through an opening too small for its exit. But we will now endeavour to prove the value of each of these operations by the trying test of experience.

We find, on referring to the Tables, that out of 114 patients who have undergone the operation of gastrotomy—

In 85 the large incision was employed. See Table (No. 12)

" 23 the small. See (No. 13).

" 6 the particular incision is not mentioned.

114

* 1 died to $2\frac{1}{3}$ recovered.

Of the 85 where the large incision was employed, 50 were cured and 35 died, making the mortality 1 in 3* nearly; in the 23 where the small incision was used, 19 were cured and 4 died, making a mortality of nearly 1 in 6.

From this statement, therefore, we should arrive at the conclusion, that the smaller incision is a much more favourable operation than the larger one, there being only one death in nearly 6 patients; whereas in the large operation one in three patients die.

We must remember, however, that many of the cases which were operated on by the large incision were quite unfit for the smaller operation, and therefore patients would be left to the natural course of their disease, had not a larger operation been in existence. Again, a vast number of the cases in the table presented the complication of strong adhesions, existing between the sac and the parietes of the abdomen, which could not be relieved by Dr. Jefferson's mode of operation. And, lastly, we must remember that in the cases where the large section was used, the cases were more severe and the complications greater than in those of the other operation: this also gives a greater cause of mortality.

On the other hand, cases are recorded in this table where the boast of the operator has been the "entire" expulsion of the cyst, after the large incision has been made, without adhesions and without complication: in such cases as these would it it not have been better to have used a smaller incision, and have foregone the triumph? But I think if, after mature deliberation and frequent examination, we are led to the conclusion that the case under treatment is one which presents a fair chance of success if operated on, while if the patient remains without interference she may die, the operator should not follow any particular plan laid down by his predecessors; but if the cyst can be extracted by a small operation, it is the wisest and safest procedure. And even if you have commenced on the smaller scale, and find difficulties presenting themselves,

* 1 died to $2\frac{1}{3}$ recoveries.

nothing can be easier than the enlargement of the incision ; you in this way give the patient the chance of being cured by the safer operation ; she having had that chance, if it fail, still you may proceed to relieve her by the larger operation. I cannot see the peculiar advantage of merely taking out the cyst entire—it has been stated that in that case there is no danger of the fluid escaping into the abdominal cavity ; nor do I see any danger of this accident occurring where the cyst is carefully punctured, and due caution given in securing the opening so made by a ligature ; you are then at liberty to finish the operation.

One finds among the operators attached to the large incision a desire to make it, in order to see how the cyst really stands affected with regard to the other viscera ; to open the abdomen of ten or twelve inches, to see *if* there are any adhesions, and to see *if* there are any difficulties ; and *if* they find them, the operation they advocate is the proper one. But then, for a moment, suppose that none of these difficulties existed, suppose there are no adhesions, no solid matter ; but the cyst fluid and unilocular attached only by a narrow pedicle. Is the major incision then justifiable ? I think not ; because by the minor every advantage would be obtained, viz. the removal of the cyst by vastly less pain, less injury to the healthy tissues, and I should imagine less tendency to inflammation. For my part, I cannot appreciate the advantage of viewing “the entire cyst rising from the wound ;” the sight may be splendid to those who glory in opening the abdomen by an incision ten or twelve inches long ; but a surgeon who wishes to attain the same end by less striking means, will do so by those which humanity sanctions, and which correct surgery approves ; if difficulties arise, the same feeling will direct his course, and he will enlarge his incision as necessity requires.

III. We must now consider the result of our inquiry, and endeavour to answer the question, What are the fair conclusions we can come to on the review of our subject ?

(1) We have ascertained that ovarian disease is one which is not so harmless as some imagine; that in fact, under ordinary treatment, it is very fatal. More than half of the cases recorded actually die, a large proportion of the others are reported only to be relieved, and only one in five recover.

(2) That not only is ovarian dropsy fatal, but that it is also much more *rapidly fatal* than is generally supposed; the tables shewing that more than one half, or 63 deaths in 124 patients, in less than two years, and more than half of these (viz. 38), died within the first twelve months.

(3) That tapping, which has previously been considered the only mode of palliating the disease, is a very dangerous remedy. For I find in the tables I have collected, composed of 30 patients, one half, or 15, died within four months of the *first* operation, and 12 of these were after the first tapping. That in the result of the tables drawn up by myself and Mr. Southam, that of 46 cases, 20 of which died after the first tapping, 16 died within one month of the operation, and 10 of these sixteen, or one half of the whole number, died in seven days after the evacuation of the cyst.

(4) We find that, supposing the danger of the first tapping to have been escaped, that the fluid reaccumulates rapidly, and that the intervals between each operation become greatly diminished, while the quantity of fluid is increased, so that its remedial powers hardly compensate for the dangers which attend its performance.

(5) We must bear in mind that in many cases the operation of tapping can be borne frequently, and life can be preserved in a tolerable state of comfort for many years, under the careful performance of the operation, from 10, 16, 25, or even 30 years; and that more than one in three patients, 43 in 142, survive the operation more than four years.

(6) That the operation of tapping ought only to be performed under one of two circumstances: either early, when the cyst is unilocular, or when the ovarian tumor is producing fatal pressure upon vital organs. In no case, except under the latter

circumstances, ought a multilocular cyst be punctured, because the relief given is so trifling, and the dangers of tapping are so much increased, in this form of the disease.

(7) That medicinal treatment produces only slight benefit; it may stop the progress of the tumor for some time, but very rarely effects a cure. Pressure, as a remedy, prevents the cyst from enlarging rapidly.

(8) That ovarian disease sometimes undergoes a spontaneous cure, either by an internal rupture of the cyst, or the communication of it by ulceration into the various outlets of the body.

(9) That from the difficulty arising in the cure of this disease, the operation of extraction of the cyst has been proposed and performed in 114 cases, of which number 74 cases have recovered and 40 died, making the average mortality nearly one in three.

(10) That of these 114 operations, in 24, or rather less than one in five, the operation was obliged to be abandoned, either from extent of adhesions, from the tumor being an uterine or omental one, or from there being no tumor at all; proving most indisputably the *difficulties of the diagnosis*.

(11) That in the 90 cases where the tumor was removed, nearly one died to three recoveries.

(12) That the diagnosis of ovarian tumors is very obscure as regards adhesions and the character of the tumor; that adhesions existed in 46 of the 81 where the fact is mentioned, and in 6 there was no tumor.

(13) That where adhesions existed the mortality was greater, being one death in $2\frac{1}{4}$, whereas the mortality was one in three where they were absent.

(14) That the disease may be complicated with organic disease of other viscera.

(15) That the principal recorded causes of death, where it took place soon after the operation, are hæmorrhage and peritonitis; but the cases are much too few to be depended upon.

(16) When death takes place in consequence of the operation it is very rapid. Of 30 patients, where the time is mentioned, 14 died within 36 hours, and 25 within a week.

(17) That the character of the disease is of importance with regard to its mortality. In the extraction of hard tumors of the ovary the mortality was more than 1 in 2. Of the 16, 9 were cured, 7 died, and in 5 the tumor was not removed. Whereas, where the tumor was composed partly of fluid and partly of solid matter, viz. in 65 cases, 44 were cured, 21 died, and in 14 the tumor was not extracted, making the mortality less than 1 in 3: so that encysted dropsy is much more favourable to the operation than hard tumors of that organ.

(18) That as regards the mortality of the two operations, in 85 cases where the major operation was performed, 50 were cured, 35 died, making the mortality 1 to $2\frac{1}{2}$.* in 23, where the minor operation was performed, 19 were cured and 4 died, making the mortality 1 in 6.

(19) That in some of the cases operated on, the ovarian tumor was malignant; but that the encysted dropsy is not in the ordinary sense of the word malignant, and that it may be removed without any tendency to malignant disease appearing in the pedicle.

Concluding Remarks.—I have now, as far as I am able, placed the subject of ovariectomy in its proper position; I have, without any bias for or against the operation, considered its results as a matter of statistical research. I have endeavoured to prove that the results of tapping, and the ordinary mode of treatment in the disease, are not those on which we can rely: but whether the extraction of the cyst, or some other mode of cure, will supersede the former ones, is for the profession to decide; and if I have been the means, by a conscientious statement of facts, of bringing about this decision, I shall be greatly rewarded for the labour I have spent upon the subject. Let those men whose position entitles them to judge, either allow that this operation is justifiable, or that it is not. If the results of its performance prove it to be justifiable, add another remedy for the alleviation of humanity; but if not, then let all the powers of an enlightened profession destroy this means of evil.

In the majority of cases which come under notice, it is my

* 1 to $2\frac{1}{3}$.

opinion that the operation of ovariectomy is most decidedly unjustifiable.

We are aware of the fact that one patient dies to three recoveries according to the statistical table, (see table of cases No. 11); but what becomes of the other three? this is a question most probably we shall never have answered. Some have, however, been kind enough, at my suggestion, to give me the particulars of these cases. Dr. Clay has kindly informed me that all his successful cases are now living, "and are much better now than they were before he operated." Dr. F. Bird has not had one unsuccessful case (1846), and all his patients are doing well. Mr. Lane kindly stated to me that his cases were all living; and if all the other members of the profession should in like manner give to the general body the after results of these cases, they would be conferring a benefit on the operation which the publication of twenty successful cases would not be able to accomplish. For if the patient *entirely* recovers her health, the operation would be justifiable even if the mortality was greater than it is.

We may suppose that of the 68 operators there would be some who, by bad diagnosis or manual tact, especially in the first operation, would add materially to the mortality of this operation; and I thought that, by referring to the results of individual and experienced operators, we should be better able to judge of the real state of the operation. We will therefore for a moment return to the cases of those who have operated frequently, and from whom you would expect the best results. And what do we find? that in Dr. Clay's practice 18 patients have been operated on; that eleven of them have recovered and seven died; in two the tumors were uterine,* one of which was not removed, making the mortality as 1 to 1 $\frac{4}{7}$. That in Mr. West's practice 4 patients were operated on, three were reported cured, but in one of these the tumor was not removed,

* Dr. Clay informs me that the diagnosis was not incorrect in these two cases, but that it was the unsuccessful extension of this operation to fibrous tumors of the uterus.

and one died. In Mr. Walne's practice 6 patients were operated on—four recovered, two died; in one case the cyst was not removed, and in one the uterus was diseased. Now if we take the case where the cyst was unable to be removed, and consequently the patient receiving no benefit from the operation, with the two deaths, Mr. Walne's success is one recovery to one death. Certainly Dr. F. Bird has operated six times successfully, and Mr. Lane has had only one death in six cases.

This then is the success of those gentlemen who have excelled in the operation, have carefully avoided all unfavourable cases, and have attended most particularly to the after treatment. What may the result be in less skilful hands, and under less intelligent men?

There have been also cases recorded as recoveries, which have not been relieved of their disease, and consequently only recovered from the effects of an unnecessary operation. This fact is applicable to the operations performed by M. Lizars, which have been in the most honourable way reported. In one case there was no tumor; in the next he removed one tumor, and left the other ovary diseased; in the third the tumor was an omental one, and was unable to be removed; and in the fourth case the patient died. Now, may I ask, what actual good did the three patients receive? He certainly satisfied one woman's mind that she had no tumor, by shewing her healthy intestines; he delighted another by taking away one diseased mass, and allowing another to remain, until it was fit for extirpation; and in a third the tumor was not removed. Now these cases are all reported as recoveries: there are many others besides M. Lizars, who have reported cases of cure when the tumor has not been removed; and if all these were struck off the list of recoveries, the aspect of the operation would be worse than it is. For when we consider the advantages of the operation, we ought to consider only those which are cured of their disease, and leave out entirely those whose disease remains, although they have escaped the dangers of the operation.

I think the operation is unjustifiable, *when the diagnosis is not clearly ascertained*. The diagnosis in these cases is very difficult, and perhaps in some hardly to be given with certainty: then, may I ask, ought surgeons to operate in such? Allow me to again remind you of the table which informs us that of 114 patients, 18, or 1 in $6\frac{1}{3}$, were unable to have the tumor removed after they had undergone the operation: and this mistake did not apply to the mass of operators, but the principal ones have met with this unfortunate occurrence. There is no doubt that the diagnosis will become improved as the attention of many scientific minds are directed to the subject. No tumor of the uterus ought to be mistaken for ovarian disease, since the introduction of the uterine sound by Prof. Simpson; the knowledge it gives will be much appreciated in the diagnosis of ovarian tumors.* However, until that time arrives it still remains an argument against the use of the knife in these cases.

Another reason against the performance of this operation is the existence of adhesions. We are aware that Dr. Clay thinks this a matter of no consequence in the operation of the long incision; but we merely point to the facts we have ascertained in our investigation on this subject, which states that the mortality was greater where adhesions existed, and less when they were absent.

There remains, however, an indisputable fact, that ovarian disease is very little acted on by medicine, and that when paracentesis becomes necessary, many, nearly one half, die after the

* I ought to mention here, that I and several others, men who were in the constant habit of using this instrument, were deceived by the uterine sound in a case of ovarian dropsy, which after death we found depending upon a peculiar displacement of the uterus. There was clearly ovarian dropsy; the question was, what was the state of the uterus? The uterine sound was passed, and it went an inch beyond the natural mark; the inference from which was, that the cavity of the uterus was elongated, and consequently a morbid growth in, or attached to, its parietes. On a *post-mortem* examination, we found that the left horn of the uterus was pulled up by the ovarian tumor, so as to bring it almost into the same axis as the os uteri; and the pressure of the tumor on the uterus gave it a fixed character: the organ was quite healthy. This fully accounted for the lengthened cavity.

first operation; it is at this time more particularly the consideration of the operation is to be sanctioned, and it is one fact in its favour.

I am decidedly of opinion that in some cases the operation is *very justifiable*. It is in those cases of encysted tumor which have enlarged to such an extent as to demand active interference, or when an unilocular cyst which had been under treatment some time is becoming multilocular, by the addition of secondary and tertiary cysts upon its inner surface, that the operation ought to be performed.* In such cases, if the diagnosis be correct, if adhesions are absent after the symptoms already noticed have been intelligently inquired of, and the health of the patient good, the surgeon is bound to give to his patient the last aid of his art, and remove a tumor which, if allowed to remain, tends to destruction. He should, however, first carefully and honestly lay before his patient the dangers she has to undergo; he should inspire her confidence by the relation of successful cases, but he should also inform her of those less fortunate. By this means he will acquire a confidence which he will find very useful in his after treatment, and upon which may depend the result of the operation.

We find that where the tumor is cystic, the mortality is as one death to six recoveries; and this speaks very favourably for such an operation. The cyst should be single, and uncomplicated with hard matter, and the powers of life active. In such cases if the operator be skilful, and the after treatment carefully attended to, a successful result may be anticipated.

If we have commenced our operation, and we find more than ordinary difficulties exist, it is the wisest and safest plan to allow the tumor to remain, and close the wound as quickly as possible: in the majority of cases where this plan has been followed, the patients have recovered; whereas, where there has been much extra manipulation, the patients have died.

* An interesting case of this sort has come under my notice lately, when the cyst had previously been tapped, and had entirely disappeared; whereas during this distention solid matter could be detected in different parts.

This is an operation which evidently ought not to be sought after: if it is to be made the means of introducing surgeons into notice, it will be fearfully abused; but we should in our treatment of this disease be aware that such an operation exists; and if any patient present herself, where the diagnosis is clear, the disease rapidly advancing in spite of all remedial treatment, and it is the desire of the patient, then we may consider the propriety of removing it.

In regard to the particular operation, both, as in most other instances, have their advantages: I would never bind myself to either, but I would adopt that best suited to my patient. We have seen that the minor, as to numbers, is the most successful one; but there are many cases related in the table that would not have succeeded had it been the one chosen, they being complicated with adhesions, &c. &c. I therefore should decidedly commence with the small operation, I should puncture the cyst to get rid of its distention after I had separated the adhesions, if any existed. If greater difficulties than I had anticipated should exist, I would enlarge the incision, and if practical I would remove the tumor. If the cyst bulges through the opening made in the walls of the abdomen, it is a good sign as to the non-existence of adhesions.

The after treatment in this disease ought particularly to be attended to, and I believe to this the success of the operation is to be ascribed. The plan Dr. F. Bird pursues—and he is the most successful operator—is a very simple but efficacious one; its object is to place the skin in such a position, as to be able at any period after the operation to cause profuse sweating. This is accomplished by elevating the temperature, and making the patient eat a considerable quantity of ice; this at once produces profuse sweating, and the patient is placed in comparative safety. If however pain in the abdomen comes on, the pulse becomes very quick, and the moisture of the skin be less, he again produces a higher temperature, and continues to do so until the perspirations return. The patient then requires *constant watching*, and she ought not to be left for many days.

I must, however, again urge that medical treatment should have a fair trial; for we must recollect that this operation, like all others, is a defect in the art of surgery, that the knife should be avoided in all cases that it is possible: and that surgeon will be esteemed the greatest benefactor to the profession, and the world at large, who would suggest some means by which the disease could be cured without reverting to ovariectomy.

CASE (No. 6).—*Ovarian Dropsy.*

Peculiarities.—The singularly loud crepitus heard over various parts of the tumor; its sudden disappearance after the sac had rapidly increased; tapping; distinct fluctuation, given by a jelly-like fluid, which would not pass through the canula, it being a multilocular instead of a simple cyst. Death thirty days after first tapping, from inflammation of the sac.

During my visit to Cambridge in 1845, my attention was directed to a patient in Addenbrooke's Hospital, labouring under ovarian dropsy, with some peculiar symptoms, and was kindly allowed to take the particulars of the case.

Hannah W., ætat. 22, single, was admitted under Dr. Bond Sept. 1, 1845. Countenance healthy; enjoys good health, and complains of nothing but enlargement of the stomach. The catamenia appeared at 16, and have continued regular in every respect up to a few weeks since. About three or four years ago she found herself getting larger, but without pain. The abdomen gradually became swollen, and about two years since took on a rapid increase, which has also continued during the last two months. The swelling did not commence at any particular side, but began "all round the body." There is, however, now more pain on the right side: she has never had cramp or swelling in either of her legs.—Sept. 12, 1845. She is unwell; the discharge is quite natural, menstruation has been more frequent—once a fortnight—since the rapid increase of the tumor. She complains of pain on the right side on walking

or making any exertion: this has been more constant lately, and that, with the size of the abdomen, only causes complaint. She is unable to retain the urine long; bowels costive; has never had difficulty in passing either urine or fæces.

On examination, the abdomen was as large as that of a woman in her ninth month of pregnancy, and measures 37 inches at its most prominent part. When in the supine posture, the abdomen retains its prominent form: there is dulness on percussion over the whole anterior surface; and there is felt a distinct crepitation in various circumscribed parts of the tumor; this is so loud as to be heard by the patient and bystanders. It is situated more particularly on the right side, and not at all perceptible on the left or below the umbilicus: above it reaches to the ensiform cartilage, the surface of the abdomen is smooth, and there are no appearances of elevations or depressions: the tumor retains its position on every change of posture of the body: there is resonance in the lumbar regions of both sides: fluctuation is distinct in all parts of the tumor. When one hand is placed upon the tumor, and the other percusses the tumor throughout its circumference, there is still the same distinctness of fluctuation, giving one the idea that the sac is formed of a single cyst. There is no fluctuation in the lumbar regions.

The only sound on the application of the stethoscope is a distinct loud crepitation, like the constant bending of new leather. This sound is remarkably distinct, and appears to accompany the breathing, producing a "to and fro" sound: it is not heard when the breathing ceases.

On examination per vaginam, the os uteri is in its natural position; the uterus is very moveable, and has no connexion with the tumor; pressure on it has no influence on the uterus. There is no bulging into the vagina, but the canal is rather lengthened. The tumor occupies the whole abdominal cavity, pressing back the intestines, so that resonance is only found in the lumbar region. There is no difficulty in breathing in the erect position; but urine is scanty.

Mr. Humphrey, surgeon of Addenbrooke's Hospital, politely gave me the particulars of the result of this case.

She continued to increase in size to January 1846, when the tumor interfered with the breathing to such a degree as to demand something imperative: accordingly she was tapped with a large trocar and canula, but only a very small quantity (a teacup-full) of a jelly-like fluid came away. The operation produced inflammation of the sac, pus was discharged, and the patient died thirty days after the operation.

It is a curious fact, that the crepitation ceased a few days before she was tapped, and was never heard again. This most probably arose from the great enlargement of the cyst preventing motion between itself and the walls of the abdomen: or did the crepitus cease from the absorption of the fluid existing in the cavity of the peritoneum, produced by the enlargement of the cyst?

Post-mortem examination.—The tumor was found to be the right ovary, very much enlarged, and divided into a very great number of small cysts, filled with a jelly-like fluid, which varied in character and colour. The cyst was attached by adhesions to the parietes of the abdomen in different parts, but not to the extent supposed. The cyst itself was found inflamed to a great degree, having produced pus, &c.; but there was not much peritoneal inflammation.

CASE (No. 7).

Peculiarities.—A multilocular cyst. Resonance in the upper portion of the tumor, produced by an accumulation of air between the cyst and peritoneum. Death after first tapping, from inflammation of the cyst itself. The operation of paracentesis did not reduce the cyst. *Post-mortem examination.*

H. M., ætat. 33, married, has had five children and one miscarriage. The catamenia appeared when 17 years old, and has always been regular until the last three months, since which time it has been very profuse: there was always a leucorrhœal discharge during the intervals. About 18 months

ago she first perceived her stomach swell; this gradually increased, and to such a size that her neighbours thought her in the family-way, and joked her on it: this annoyed her so much, being a widow, as to determine her to ask the advice of a physician, who told her that she laboured under ovarian dropsy. From this time her size gradually increased, and nine weeks ago she came under the care of Dr. Wilson, Gray's Inn Free Hospital for Pneumonia.

Jan. 10, 1845.—She complains of pains in the abdomen, running down the thighs; the belly presents a round even surface, but the tumefaction bulges rather to the left. On percussion a very resonant sound is produced, from an inch above the umbilicus to within two inches of the pubis; it is then quite dull, and at this part fluctuation is distinct. The tumor has a circumscribed appearance, the upper part of which is resonant.

Mr. Gay tapped the patient, and drew off about four quarts of a reddish-brown fluid, containing a few particles of lymph and shreds: the last portion of fluid which passed from the canula was gelatinous. This evacuation did not diminish the size of the abdomen more than two inches, and no air passed from the canula. The fluid drawn off was of a reddish-brown colour, like strong gravy soup. Under the microscope I observed a number of blood globules in various stages; some were quite distinct, with a central depression, some were broken up, and pieces of others were seen floating in all directions. (St. G. i. 150.) Heat and nitric acid caused great coagulation. She bore the operation well; but in a few days symptoms of peritoneal inflammation came on, and she died eight days after the first tapping.

On a *post-mortem* examination the peritoneum was found closely adherent to the cyst, as high as the umbilicus; from this point it was greatly distended, and on making a small puncture a quantity of air escaped: this was found to occupy the space between the second cyst and the peritoneum, which gave rise during life to the symptoms of air being retained in the cyst

itself. The cyst itself was found to be divided into two equal parts by a white tendinous band: percussion on the upper portion did not communicate the sense of fluctuation to the lower one, although fluctuation was distinctly perceived on each when examined separately. The cavity of the cyst was divided into two portions opposite the umbilicus; the upper portion was found to be entirely a simple cyst, with thin walls, containing three quarts of fluid of a sero-gelatinous character, and of a pale yellow colour: it coagulated by heat and nitric acid, and was divided from the lower cyst by a tense membrane. The lower cyst was much more complicated than the upper one, and was the one opened during life; it contained nearly two quarts of a dark blood-coloured serum, like that withdrawn during life. Its walls are very thick, and at the lower portion there existed a number of secondary and tertiary cysts of larger or smaller dimensions. Some portions of the thickened wall were studded with innumerable small cysts of the size of a pin's-head. The larger secondary cysts were very vascular, and presented on their surface a distinct layer of coagulable lymph, which was slightly attached to their surface; being distinct evidence of inflammatory action having existed in that part. The secondary and tertiary cysts contained fluids, which were very various both as regarded their colour and consistency: in some the fluid was almost gelatinous, in others dark and glary, and others contained a clear yellow serum.

The cyst was a disease of the left ovary, the right ovary and uterus being healthy. The vena cava was greatly distended with air, although the *post-mortem* examination was made about sixteen hours after the death of the patient.

CASE (No. 8).—*Tympanitis, mistaken for pregnancy and ovarian dropsy.*

Peculiarities.—Great distension of the abdomen. Tumefaction, resembling an ovarian tumor, or pregnancy: it was mistaken for both. Cured by large anema and ox gall.

Mrs. B——t, ætat. 24, has been married eight years; has

never had any children, but thinks she once miscarried. Countenance healthy; health good until lately; catamenia regular, but followed by a leucorrhœal discharge. Rather more than twelve months ago she perceived a swelling of the abdomen, which she concluded arose from pregnancy: it continued to increase in size until much after the usual period, when she was informed that she had disease of the ovary. She thinks the tumor commenced on the left side, in the left groin, and gradually increased upwards. Since this swelling appeared, has had great pain before the catamenial periods, which, however, are regular. All the functions of the body are performed well; she occasionally complains of faintness after exertion, but attends to her household duties regularly.

On examination externally, the abdomen presents an enlargement of the size of a nine months' pregnancy; its walls were tense, but no defined tumor could be ascertained. There are no large veins in the walls of the abdomen; no bruit or placental murmur can be heard: on percussion there is resonance nearly all over the surface, except on the left side, where it is evidently duller, and a fulness is felt in the course of the zigonoid flexure of the colon; borborigmi are distinct, and no fluctuation is discernible.

On examination per vaginam, the vagina is small and somewhat short; the os uteri is very small, not admitting the uterine sound; cervix the proper length—this appears to be rather drawn up into the pelvis, although its direction is natural: on pressing the finger on the side of the cervix the uterus is felt moveable; it has no connexion with the appearance of the tumor in the abdomen. Pressure on the abdomen does not affect the uterus. There is a slight discharge from the vagina. On further enquiry she states, that there are shooting pains in the left leg, which frequently swells; movements are also perceived in various portions of the tumor, which she compares to the kick of a child. Many medical men have seen her, and declare that she is in the family-way; and she has once prepared everything for her confinement. The breasts are

flabby, and give no signs of pregnancy; the arcola is quite absent, but there are a few small follicles like sebaceous glands. Great pain has been felt in the breasts, especially the left; and she is frequently sick in the morning. There is a distinct sense of weight in the abdomen, with dragging in the back. She was ordered a large enema (one or two quarts of gruel), R. Pd. Hyd. e Ext. Colocq. comp. gr. iiss noct. manège. R. Pot. Iodid. gr. iij., ex. aqua bis quotidie.

This treatment was continued for a few weeks, which greatly reduced the size of the abdomen, and in about a month we firmly bandaged it, and administered ox gall, still continuing the large enemata. This yet more reduced her, and she ceased her attendance: however, I saw her again about three months afterwards, when she appeared healthy, and described herself "as quite perfect," of her natural size, and in good health.

ORGANIC AND MALIGNANT CHANGES IN THE OVARY.

HAVING considered the most usual form of ovarian disease, viz. ovarian dropsy, it now becomes our duty to investigate those more rare diseases arising from organic and malignant deposit, where the symptoms of general derangement are more apparent than local disorganization.

The various enlargements arising from the results of inflammation which disappear with their cause, are here properly omitted, as not strictly appertaining to the subject of this Essay, and only those tumors are spoken of which are permanent and produce disease or derangement by their pressure.

1. *The Organic enlargements of the Ovary.*—The simple tumors of the ovary are very few, and are indeed rarely met with; the form of disease more usually seen is the fibrous tumor. This growth is not the actual tissue of the ovary converted into a morbid mass, but it partakes of the character of the fibrous tumor of the uterus, and is developed in the structure of the ovary. It increases sometimes to a great extent, and its size may vary from a few ounces to thirty or forty pounds, (Prof. Simpson of Edinburgh possessed a preparation weighing 56 pounds). When this disease exists, a similar one is found very frequently in the uterus. The structure of this tumor of the ovary and that of the uterus is apparently identical; each presents the appearances already described, (see *Tumors of the Uterus*,) viz. a dirty-white fibrous mass, intersected in all directions by white fibrous bands, and frequently containing white crystalline grains. They are very poorly supplied with blood-vessels, and are always enclosed in a cyst; when they attain a large size they entirely obliterate the parenchymatous structure of the ovary. This identity of structure between these bodies and those of the uterus has been long observed by Cruveilhier

and Dr. Baillie, who described them as such; the former thinks them so much alike that in some cases "it is impossible to determine to which of the organs, ovary or uterus, they may have belonged."

There are some large specimens of these tumors in the King's College Museum: in preparation No. 4, both ovaries are enlarged to the size of cocoa-nuts, with several small tumors projecting from the surface. The structure seems to be that of a tumor resembling those of the uterus, with numerous bands intersecting each other, and the interspaces filled up with cartilaginous deposit; no graafian cells are enlarged, but they all appear to be obliterated, and the tissue of the ovary has disappeared. The surface is intersected with numerous veins forming a net-work.

These tumors are very slow in their growth, and produce only symptoms of irritation by their pressure and presence; changes of structure may take place, and the tissue of the tumor may be converted into cartilage or bone.

This disease rarely gives rise to any symptoms referable to itself. Dr. Kilgour* gives a case where the patient had laboured twenty years under this disease of the ovary without any uneasiness or injury to health from it, and who died after a couple of days' illness with disease unconnected with the swelling. Dr. Lee also mentions a case of nine years' standing, but which had given rise to some severe symptoms.† Thus, then, we find this disease slow in its progress and dangerous from the pressure it exerts on other important organs. Dr. Kilgour states that this tumor has the same character as the fibrous tumor of the uterus, and unless improperly interfered with, may exist for many years without giving more disturbance than is occasioned by its bulk.

In a case of this kind which came under my notice the first symptoms which were appreciable to the patient were a throbbing pain in the groin with a sense of heat, the left leg became swollen, which symptoms shortly afterwards

* *London and Edinburgh Monthly Journal.*

† *Cyclopædia of Anatomy and Physiology.*

disappeared and then returned. The symptoms when I saw her were those of abscess in some part of the abdomen, which after death was found to communicate with the tissue of the ovary.

It is the opinion of many, and that of Dr. Baillie, that these tumors have very little tendency to inflame or ulcerate, and I believe the opinion to be correct; but they often give rise to inflammation of the surrounding tissues, which cuts off their supply of blood, and they themselves become disorganized; this occurred in the above case. An abscess appeared in the walls of the abdomen, which during life was supposed to be in communication with the intestines, &c.; it burst; several sinuses opened, and the patient sank under excessive discharge. On examination after death, we found a large pelvic abscess involving all the organs in pus, and after taking out the uterus, with its appendages and the rectum, we observed that the ovary contained a large fibrous tumor, about the size of half the fist, quite in a state of disorganization, shreddy, soft, and pulpy, and pus was effused between almost each fibre or tendinous band; this tumor had also so pressed upon the neck of the uterus as to have obliterated its cavity.

This kind of tumor is usually first discovered either during or after labour. At first it is felt in one or other groin, generally the right, it is entirely moveable, and gives a sensation like that of "ballotment:" when ascetic fluid is present it is attended by hardly any symptoms of pain, except when it is increasing or inflamed; but it generally gives rise to symptoms referable to pressure on the various organs. Œdema of one or both extremities is frequently present, and is usually accompanied with the discharge of a serous fluid into the peritoneum. This may take place to such an extent as to require the frequent operation of paracentesis: one patient, whose case is recorded by Dr. Kilgour,* was tapped forty-three times for dropsy arising from the pressure produced by a hard tumor of the ovary: its surface may be either smooth and hard, or it

* Op. cit.

may be tuberculated and rough; there is no pain experienced on handling it, and it can be moved with the greatest facility. It is slow in its growth, lasting in many instances twenty years, and, besides, the constitution does not suffer as in malignant disease.

When ascites exists, this tumor may be confounded with the hard masses of a true ovarian dropsy. These masses are felt in different parts of the abdomen, or may be confined to one, and fluctuation exists. But the signs by which this disease is distinguished from others are its mobility, "for it moves up and down in the fluid, striking the finger exactly like a child in the utero, in what is termed the ballotment;"* this is when the peritoneum contains a pretty large quantity of fluid; whereas in the masses of encysted dropsy the hard portions are fixed, and we are unable to throw them from one part of the abdomen to the other, because they are component parts of the cyst which contains the fluid. Then again you have all the signs of ascites, the resonance on percussion, and the fulness of the lumbar regions on the patient lying down in the latter, and the protuberant belly in a true cystic disease.

The greatest difficulty exists in distinguishing this from scirrhus; in the latter the constitution suffers greatly, but in a simple tumor it does not. Mad. Bovin considers all the large tumors of the ovary to be of a scirrhus character, and Dr. Seymour seems to be of the same opinion.

* Kilgour, Op. cit.

MALIGNANT TUMORS OF THE OVARY.

1. *Scirrhus of the Ovary.*

THIS disease possesses all the symptoms of hard tumors of that organ; its surface may be tuberoso or smooth, and gives rise from the very first to great and wearying pain. In a case of this kind, notes of which I took carefully,* I found the tumor, which occupied the abdomen as high as the umbilicus, was so rapid in its growth, as to have been only seven weeks arriving at that state; and that its first symptoms arose after labour, with an acute pain in the left side and shivering, after which the patient for the first time perceived a tumor as large as the fist, and in seven weeks it attained the size of a large gourd: the countenance of the woman was pale, anxious, and expressive of pain; she was weakly and of a fair complexion. Since its first commencement she had had continued pain in the tumor, which was described as of an aching burning character, and referable to its upper part just about the umbilicus. The bladder and rectum were not affected, the os uteri was pulled up to the same side on which the tumor was placed, but the uterine sound did not indicate that the uterus was diseased.

Then, by the rapidity of its growth, by the constitution and habits of the patient, by the great pain experienced in the tumor, and by its stony hardness, we judged that the case was a scirrhus of the ovarium.

The sensation of pain, however, is not always present in scirrhus ovary, and the patient in some cases may suffer but little either locally or in the general health, but in some

* See Case No. 9.

period of the disease pain and inflammation may come on; and perhaps those symptoms are the first to attract attention and urge the patient to receive medical advice.

The immunity of the bladder and rectum from pressure and its effects can be accounted for in the case above alluded to by the rapid growth of the tumor and its early occupation of the abdominal cavity; and it is observed that solid tumors of the ovary much sooner occupy the cavity of the abdomen than the ordinary ovarian dropsy.

Another fact worthy of observation is, that a scirrhus ovary is most frequently complicated by the deposit of scirrhus matter in other parts. This is seen in very many preparations in Guy's Museum, and cases of Dr. Bright's can be referred to in Guy's Hospital Reports, where the pylorus of the stomach was found to be a frequent seat for this malignant disease; the neck of the uterus was also liable to its ravages, and the intestines were frequently attacked. The breasts are perhaps the organs most frequently affected when the ovaries are the seat of malignant deposit.

The tumor, when as large as the closed hand, may fall between the rectum and vagina, and produce great irritation both of the rectum and bladder; diarrhœa may be produced or very obstinate constipation. Œdema of the legs, varicose veins, and violent tenesmus may arise, with weakness in the back, so as to induce the patient to lie much upon it. Dr. Blundell says "that there may be severe pains along the loins and a ripping sensation in the course of the nerves, sciatic or crural; the tumor may either increase rapidly, or remain dormant for a considerable time in the latent state."*

The best definition of a scirrhus ovary is one given by Doctor Baillie, when speaking of a preparation now in the College of Physicians, and, according to his opinion, a fine specimen of this kind of disease: "this preparation presents," says he, "a section of a scirrhus ovarium, (resembling more a section of a scirrhus testicle than the ordinary appearance

* *Diseases of Women.*

of an ovarium under disease), which was in various parts beginning to soften, the substance breaking down into thick brown fœtid fluid. This preparation was taken from a patient who died of cancer of the stomach, which Dr. Baillie says is the same disease, (Seymour).

In St. Bartholomew's Museum* there is a good specimen of this disease before it arrives at the stage of softening. It is described as follows: "Each ovary is converted into a large hard rounded tumor, lobulated on its external surface. The tumor consists of very dense fibrous tissue; on the surface and interior of each are membranous cysts which contain a serous fluid. From a woman 38 years old, from which two carcinomatous mammæ had been removed three years previously." In the Museum of the Royal College of Surgeons, England, *Ovary 9* is a beautiful and rare specimen of the carcinomatous ovary: the preparation is described as "a uterus with the ovaries, both of which had been converted into nodular masses of a diseased and hard substance, probably carcinomatous. The masses have each an irregular oval form, one of them measures $3\frac{1}{2}$, the other $2\frac{1}{2}$ inches in its chief diameter."

In speaking of ovarian dropsy generally, we stated that we did not consider it in the ordinary acceptation of the term malignant. But there are certain forms of it which have malignant deposit in the cellular portions of their structure; and in these cases there is almost invariably malignant disease in other organs; so that we may suggest the idea that any other organs, if in a morbid condition, would be liable to malignant deposit as well as the ovary, that is to say, a carcinomatous diathesis may affect any organ prone to disease; and that it affects the glandular organs connected with the generative system in women, because they are more prone to disease than any others; and when the ovaries are diseased in women who have not this cancerous diathesis, they are free from malignant deposit in their tissues. In fact, the cystic disease of the ovary is not primarily cancerous, but becomes affected sometimes

* Preparation No. 55, series 26.

secondarily. The cystic tissue may either take on a scirrhus hardness, or cribriform matter may occupy the secondary cysts. Dr. Bright, in Guy's Hospital Reports, vol. iii. has given many cases where these changes have taken place. At page 241 he describes the *post-mortem* appearance of a cyst he considers malignant. "The external surface of the cyst exhibited on its left side where we had felt the lobulated mass, the appearance of a true scirrhus disease, vascular, lobulated, and of a cartilaginous hardness, and a large net-work of veins ran over part of its surface." Again, at p. 249 of the same volume, in the case of Mrs. B., the different parts of the tumor were in different states. Some parts bore the appearance of fat, while some were decidedly cribriform, and on the outside of the tumor were several lumps of truly scirrhus hardness."

2. *Encephaloid Disease of the Ovary.*

This disease is very rarely met with in the ovaries, although comparatively frequent in the uterus. Dr. Hooper states, "that this disease is not often found in the ovarium; I have seen only one instance of it. In this the whole of the uterus was a cephaloma; the ovarium about twice its natural size, and cephalomatous; and there was a large tumor, the size of an orange, of the same medullary substance, attached to the side of the uterus by a delicate peduncle."* There is a preparation however in the Museum of the Royal College of Surgeons, England, (*Ovary* 966), put up by Mr. Hunter, of medullary ovary. The description of the preparation is the following: "A uterus with the broad ligament and ovaries and a portion of a large tumor connected with the left ovary, and apparently composed of medullary substance: the right ovary and other parts are healthy." I have had the opportunity of examining a true encephaloid tumor of the ovary, in a poor woman who died of cancer of the uterus in the Hospital for Women, Red Lion Square. The carcinomatous disease commenced in the anterior

* Op. cit.

lip of the os uteri; it presented the rounded character which is usual where one lip only is affected. It however soon spread to the adjacent surface, and so involved the vagina. The portion connecting the vagina and uterus had before death ulcerated entirely through, so that on the *post-mortem* examination the uterus was found to be entirely detached from the vagina, and came away by merely applying the slightest force to the fundus uteri without the aid of the scalpel.

On opening the tumor attached to the uterus, which was found to be the right ovarium, a peculiar appearance presented itself; fine fibrous lines were seen running in a very regular manner from the circumference to the centre, converging to it as a point. These lines were accompanied with fine and delicate blood-vessels, in most instances giving the mass a pinkish tinge, shewing it to be freely supplied with blood: this appearance was not general, but was marked in some parts more than in others. The substance was found to be made up of a number of fine cells, filled with a pale yellowish substance of the consistence of cream, which could be squeezed from its surface or scraped off with the scalpel. When a part of the tumor was torn, the surface presented a very rough granular appearance, as if one set of cells had been broken and had left another set entire. The tumor was irregular on its surface and of the size of a small orange, or twice the size of the healthy ovary; one nodule projected from it. It presented internally all the appearance of an encephaloid polypus which had been removed a few days previously. The tumor was firmly adherent to the posterior part of the uterus, but to no other structure; the portion of the vagina around the os uteri had ulcerated through.

The symptoms in the case detailed above could not, during life, be distinguished from those which arose from the ulcerated cancer at the neck of the womb.

In cases where encephaloid tumor of the ovary exists, you generally find the same or a kindred disease attacking other parts. The constitution soon shews signs of decay: the coun-

tenance is of a dingy hue, tinged with yellow; there is a great loss of strength, the body becomes emaciated, hectic fever sets in, and the patient rapidly sinks.

When the tumor is bound down by adhesions, it is much less rapid in its growth than when floating freely in the abdomen. In the case alluded to there was obstinate diarrhœa, which soon produced fatal effects. When situated in the pelvis, it produces the symptoms of pressure, as other local diseases; the tumor can be felt per rectum, and its malignancy suggested by the general symptoms, and most frequently disease in other parts. When in the abdomen, the rapidity of its growth, its nodulated and pulpy feel, and the excessive pain accompanying it, being increased at night, all indicate the nature of the malady. Very frequently in this disease the glands of the groin become enlarged, and the recipients of this morbid product. This was seen in the case already quoted; they were large, and very much indurated.

The Hæmatoma, or blood-like tumor, as it is described by Dr. Hooper, appears to be the cephaloma of that organ, only in a very vascular state; so much so indeed, that Burns described this disease as Fungus Hæmatodes. This disease sometimes, though very rarely, attacks the ovary. Dr. Hooper* has beautifully figured one specimen (Plate 9): his description of the preparation is as follows. "The drawing I have given of one, viz. a case of hæmatoma of the ovary, is however a fine example of it. I have seen only two others, which were not so large, and I am disposed to think that when hæmatoma takes place in this organ, the ovarium soon after becomes hygromatous; and that as the cells enlarge they compress and stop the fungus growth; for masses of flesh, mostly spongy and of a mixed character, are frequently found in and about the ovarium. This disease very quickly implicates other organs, and produces fatal disturbance." I have not seen a case of this fearful malady.

* *Diseases of the Uterus.*

Melanotic disease sometimes attacks the ovary, together with the other viscera of the body. The preparation which accompanied this Dissertation was taken from a patient who died of melanosis. The deposit was very perceptible on the serous membrane of both ovaries and uterus, but maceration had taken away the marked appearance. The right ovary, which was destroyed, was filled with the peculiar black deposit of the disease. In the Museum of the Royal College of Surgeons, England, was a fine specimen, put up by Mr. Liston, (T. 35, *Ovary* 10,) and described as follows. "A section of an ovary, greatly enlarged by the deposit of melanotic matter, by which it is converted into an uniform black soft mass. Its peritoneal covering has a singular mottled appearance, from the various shades of colour produced by the melanotic diseases in and beneath it." What makes this case still more valuable is, that its history is appended to it, and it will serve to illustrate the disease. "The patient was a woman 42 years old, the mother of ten children. She was ill ten weeks: a circumscribed moveable swelling was felt at the lower part of the abdomen, and there were several small tumors beneath the integuments of the abdomen and other parts, which after death was found to be cysts filled with a dark pulpy substance. The patient had lancinating pains in the loins, abdomen, and extremities, and at the last hectic fever, with copious expectoration and occasional vomiting of dark-coloured fluid. After death nearly the whole of the peritoneum was found spotted and streaked with deposits of melanotic matter; and there were several melanotic tumors in the omentum. The pleuræ, lungs, and pericardium were similarly diseased; the sternum, ribs, parietal and occipital bones, and all the inner table of the skull, were black, brittle, and unusually soft; and there were dark stripes on the membranes of the brain. The uterus appeared healthy."

Another preparation of the disease is preserved in St. Bartholomew's Museum (No. 54, series 26), where the ovary was altered in form, and the natural structure removed, and in

its place a very soft melanotic matter is deposited: there are also some melanotic spots on the peritoneum, covering the uterus.

Treatment of Malignant Diseases of the Ovary.—I fear that the treatment of the preceding diseases is still involved in the same mystery as all other malignant tumors. Of late years attempts have been made to extirpate them; but we have shewn that the mortality in cases of hard tumors of the ovary very greatly exceed the reported cures; and when the tumors have been encephaloid, they have been almost instantly fatal, from the excessive hæmorrhage and the shock of the operation. Besides, what can be the use of extirpating a malignant growth? It is bad surgery, and worse diagnosis; it is sure to return in other organs if the patient survive the fearful operation.

Palliatives are our only resource, and these ought to be carefully used, so as not to hurt the general health of the patient, which ought by every means to be strengthened. Quiet of mind and quiet of body are essentials. Remove, if possible, any inflammatory affection which may spring up, support the body by a light nutritious diet and tonics, and divert the mind. These are admirable directions on paper, but the practical man knows the difficulties with which they are surrounded when attempted to be put in practice.

Dr. Blundell gives good advice on this subject: he says, "If the tumor (scirrhus ovary) has once acquired the bulk of the fœtal head, there is no reasonable hope of the dissolution of the scirrhusity by any medical treatment which you can employ; and therefore to make the vain attempt by means of the more violent medicines is, to say the least of it, exceedingly unwise. To purge exceedingly, to administer calomel largely, to give conium in injurious doses, to injure the health by a headlong use of iodine, I should consider to be a very unjustifiable practice: I would not allow it in my own family, and I would not therefore have recourse to it in the family of others. Confine your treatment to the palliation of symptoms on general principles: when the tumor is between the vagina

and rectum, replace it in the abdomen. In scirrhus ovary I hold it as a sort of axiom, that of persons labouring under this disease, those who do *least* will do *best*; and this applies to the other diseases under consideration.*

Tumors of the Fallopian Tubes.—It is very difficult, nay, almost impossible, to distinguish diseases of the fallopian tubes from those of the ovary during life; but, fortunately for practical purposes, this is a matter of little consequence. These tubes, like all other parts of the body, are liable to acute and chronic inflammation, and consequently also to their results.

Abscesses frequently form in these bodies, with great distention of the cavities, which may even burst into the neighbouring organs. M. Andral has mentioned a case, where “the patient had been affected with constipation, then vomitings; and pains at first on the right side, then on the left of the abdomen, and in the right thigh. A tumor was gradually formed in the left side, accompanied with fever, emaciation, purulent diarrhœa, and death. On examination after death the fallopian tube was found considerably dilated by pus, though still tortuous in part, and therefore distinguishable; and it opened into the rectum by an orifice capable of admitting only a quill.”

When the inflammatory action is not sufficiently great to terminate in the formation of pus, or where the inflammation is confined to the peritoneal coats of these organs, it may produce adhesion to the various viscera adjoining, viz. the uterus, the ovaries, &c. This being the case, the extremities of these tubes may be closed, and then adhesions and accumulation of fluid may take place in these cavities, producing what Dr. Hooper calls hygroma of the fallopian tubes. This distension most commonly takes place when both the extremities of the tube are closed. This is shewn in preparation *Ovary 2*, in the Museum of the Royal College of Surgeons, England, (*Ovary 967*), “where the fimbriated extremity of the fallopian tube has been turned round, and become adherent to the side of the uterus; and in consequence of the closure of both its

* *On Diseases of Women.*

orifices, fluid has collected, and has distended it into an elongated pyriform sac. But it also frequently takes place where the uterine extremity is open. Dr. Carswell gives a drawing of a case of this kind (No. 18), and a description of the appearances: he says, "In this delineation the uterus is seen from behind; the fundus has been a little elevated, to shew the false cellular membrane which connected it with the rectum and peritoneum, covering the posterior part of the pelvis. The inflammations which produced these adhesions, and had drawn down the uterus, had also occasioned adhesions of the fallopian tubes to the posterior parts of the uterus. The right was turned onwards, backwards, and downwards, and lay in the form of the gall-bladder within the cavity of the pelvis. The fimbriated extremity was completely obliterated; and from this upwards, to within an inch and a half of the uterine extremity, the capacity of the tube equalled that of the gall-bladder of a child five or six years of age when distended with gall. The uterine extremity was open, but the serosity which the enlarged tube contained could not be made to pass into the uterus, unless by continued and pretty strong pressure, and even then only a small quantity oozed out. But, however, by the means of a blow-pipe introduced into the uterus extremity, air could easily be made to pass into the tube, which became still more distended." We therefore see that this disease may arise either from the obliteration of both extremities of the tube or only one; but in the latter case the fluid is generally so tenacious, that it is unable to escape into the uterus, and therefore produces the same effect as if it were obliterated.

The size of the tumor varies and depends chiefly on the quantity of fluid effused into the cavity. Dr. Hooper says, "The fallopian tubes are not unfrequently distended by a serous fluid. I have never seen more than 7 oz. in one tube; from one to two ounces is the most usual quantity. When an hygromatous tumor is found in the tubes, they are generally destroyed, and the abdominal openings obliterated. The sides of the tubes are distended into complete bags, which have

a long tortuous or pyriform shape, being always much the largest at the loose extremity."

But sometimes the tube acquires a very large size, and may be mistaken for ovarian dropsy. De Haen speaks of an hypertrophied fallopian tube, which weighed alone 7 lbs. and contained 23 pints of fluid. Cases have been quoted, in which even 112 pints have been found in the organs; but the fallopian tube, the ovarium, and the blood ligaments were all blended in the cyst (Blanchard). Madame Bovin and Duges relate a remarkable case from Frank, in which a pint of fluid escaped daily by the uterus and vagina, till the patient died of constipation. On examining the body, 31 lbs. of a watery and gelatinous fluid were found in the left fallopian tube. In the Museum of King's College (Hooper, 257) is a preparation where the fallopian tube was distended sufficiently to hold half-a-pint of fluid. In St. Bartholomew's Museum (Prep. No. 12, series 22) is a very large dilatation of the fallopian tube; and in No. 46 is one as large as the distended bladder. The symptoms of this disease may be, and frequently are, confounded with inflammation of the ovary and its effects. Dr. Lee says it is difficult, or impossible, during life, to distinguish dropsy of the fallopian tubes from cysts formed in the ovary; but it would not be of much practical importance if the diagnosis could be drawn. When there is inflammation of these organs, there is deep-seated throbbing pain in the hypogastrium and pubic regions, extending to the groins and down the thighs; there is a sense of heat in the part with increasing abdominal tenderness, and there are general febrile symptoms. There is said to be, by Dr. Churchill, no swelling, and this is the principal ground of diagnosis from ovarian disease.*

In its treatment we must proceed upon general plans to allay inflammation, and if swelling and fluctuation succeed, we may apply the same remedies as in ovarian dropsy. All internal remedies are unavailing in this state, and death has followed

* Churchill *On the Principal Diseases of Women*. Ed. 1838, p. 339.

tapping the tumor; and in some cases the viscid state of the fluid has prevented it from passing through the canula.

The disease generally attacks patients after labour, when all the organs are involved in inflammation; but Frank gives a case where a violent blow produced the disease.

Tuberculous matter may be deposited in the fallopian tubes, producing a tumor. This disease generally arises in consumptive patients, who have suffered long from their disease, and then tuberculous matter is deposited in these organs. Dr. Carswell has given some beautiful drawings illustrating this disease.* In the latter preparation, "the fallopian tubes are distended of a pyriform shape, with their broad extremity turned downwards; the inferior extremity of both tubes was filled with tuberculous matter of the consistency of cream cheese, which adhered slightly to the internal surface of the tube, at which part it was somewhat more consistent." In the Museum of King's College Dr. Hooper has placed several specimens of this disease. In one* the fallopian tube is so enlarged that the cavity will receive a walnut, and in it tuberculous matter was deposited.

Bony Tumors of the Fallopian Tubes.—These are very rare occurrences, although they are sometimes met with. Dr. Baillie states, "I have seen a hard round tumor growing from the outer surface of one of the fallopian tubes. This, when cut into, exhibited precisely the same appearance of structure as the tubercle that grows from the surface of the uterus, consisting of a hard white substance intersected by strong membranous bands. This however I believe to be a very rare appearance of disease; and Dr. Hooper remarks, "a more uncommon situation of the bony tumor is the cavity of the fallopian tube. It is occasionally seen, very small, deposited in the cellular tissue and the peritoneum of the tube; and I once found it in the cavity of the canal itself, about the size of an olive; the cavity was destroyed, and the tube terminated in a cul-de-sac.

* Drawings $\frac{48}{461}$ and $\frac{50}{434}$ in the University College Museum.

† Prep. 164, King's College Museum.

In a preparation at King's College Museum there is a small bony tumor within the walls of the fallopian tube.

CASE (No. 9).—*Scirrhus Tumor of the left Ovary.*

Peculiarities.—Very rapid growth. The tumor not producing any inconvenience except from the pain. The left ovary was diseased.

Mrs. H., ætat. 29, is married and has had six children. She generally enjoys good health, and never perceived any swelling, pain, or any other symptom, in the stomach, before her last confinement, which occurred seven weeks ago. During the period of gestation she was not larger than usual, but was actually small, the effects of pregnancy not being very perceptible. The labour was natural, but attended with hæmorrhage; she however went on well for a fortnight. About this time she was taken with severe shivering; she immediately went to bed, and in about half-an-hour afterwards she felt an acute pain in the left side, and then for the first time found in the left groin "a lump as big as the double fist." The pain and swelling have gradually increased, the former coming on in paroxysms.

Before the time of her attack she had not exerted herself more than usual, never had a fall or blow, and the labour terminated naturally.

March 10, 1845.—Countenance pale, rather anxious, expressive of pain; feels very weak; complains of a large swelling in the abdomen, with an aching burning pain across that region, over the umbilicus more especially, which is increased on pressure. There is no sickness, no pain on going to stool, no flattening of the fœces, or pain on micturition. The only complaint she makes is that of the pain in the tumor.

On examination, the parietes of the abdomen are loose and flabby, and cover a hard tumor of the shape of a gourd, extending to about an inch above the umbilicus. It is very moveable, and appears to rise from the left side of the pelvis. There

is dulness on percussion from the pubis to an inch above the umbilicus, and at the circumference of the tumor there is resonance. There is no fluctuation, and the tumor is of stony hardness, and painful on pressure. The abdomen measures 26 inches.

Vaginal examination.—The uterus is higher in the pelvis than natural; lips natural; os uteri slightly open and drawn upwards towards the left side. The uterine sound passes to its natural extent; when the uterus is pushed upwards it moves the tumor, but the organ itself appears small and not heavy. The tumor of the abdomen can be felt in the back and upper part of the vagina, more prominent in its left upper side. Pressure in this position gives pain. A few laxatives were given, and an opiate to allay the pain.

April 3, 1845, I again visited this patient. The tumor was certainly less moveable than at the previous examination; the pain was less, although it still produced inconvenience; the size of the tumor had not increased. The sound when in the uterus did not move the tumor.

Since this date I have not seen her, she having left for the country.



PART III.

TUMORS OF THE VAGINA AND THE EXTERNAL ORGANS OF GENERATION.



I.—OF TUMORS OF THE VAGINA.

THESE may be divided into three classes. 1. Those depending upon adventitious structure. 2. Those formed by the dilatation of the cysts of the mucous membrane of the vagina. And 3. Those formed by the protrusions of the mucous membrane of the canal, projecting from between the vulva.

1. Those tumors which arise from additional structure, and produce the various kinds of polypi, in this situation are rare in their occurrence, but may be found in females of a tender or advanced age. Lisfranc has seen them in girls of 8 and 15 years old, also in women of 54; and he states that all temperaments are subject to them. Their usual position is on the posterior wall of the vagina, but cases are recorded where the anterior wall was the seat of their production. Their structure may be various, fibrous, vesicular, or cellulo-vascular; the former is the most rare, but there is a fine specimen of it in St. Thomas's Museum, of the size of a walnut, and is situated on the posterior wall of the vagina, very near its reflection into the neck of the womb.

M. Lisfranc has seen polypi in this situation, of the texture of a piece of spleen (cellulo-vascular). He says, in speaking of one of those, "a woman of 36 years of age came to consult me for menorrhagia, which occurred every time on coition, lasting abundantly for several days. The complexion was pale and yellow; pulse feeble. I examined, and found a polypus on the posterior wall of the vagina, three inches up. I excised the tumor; its structure was made up of a great number of vessels, like the tumor of the spleen. The patient was cured."

I have seen a polypoid mass of this structure in the vagina of a woman who was married and had borne children; she complained of a bloody discharge after coition, with great

irritation of the parts. I examined, and found at about an inch within the vulva, and on the posterior part of the vagina, a mass of soft vascular substance, divided into long bands, some of which were hanging from the external orifice; others were shorter, and the mass occupied the space of an inch on the vaginal surface. These bands broke away under examination, and on the application of the slightest force, giving rise to slight bleeding.

The size of these tumors varies from a mere granular growth to tumors of a large size. M. Baudier has given a description of a tumor, ten pounds and a half in weight, which grew from the vagina; and M. Dupultron relates two cases in which fibrous tumors of enormous size were developed in the vagina.

The symptoms of these affections are those referable to irritation and pressure. A foreign body in the vagina irritates and inflames the mucous surface, producing a mucous discharge, which may be profuse or slight, according to the irritation set up; it may be mixed with blood if the tumor has been irritated, become extremely fœtid, and give rise to a suspicion of cancer. The functions of the bladder and rectum may be interfered with and deranged, constipation may occur, and even inflammation of the bladder arise. When large they prevent copulation and impregnation, produce hæmorrhage and a constant leucorrhœal discharge. The patient complains of central pain in the pelvis, and sense of weakness and dragging pains in the loins, which are greatly increased on passing the water or evacuating the rectum.

2. The next form of tumor presents the same symptoms as we have detailed, and may be mistaken for the same disease as above, but it arises from a different cause. It consists in the enlargement of the mucous follicles of the vagina from the obliteration of their ducts. There may be many or only one, and may vary in size from a pea to a prolapsed womb. They are situated more particularly about the orifice and inferior part of the vagina, on account of the mucous glands being more numerous in that situation.

These tumors have been described by Sir A. Cooper, who was the first to notice them, but they have received more particular attention from Dr. Heming, who says, "It has not, I believe, been hitherto conjectured that some of these tumors, which are known occasionally to occupy the pelvis and obstruct parturition, have a similar origin to the enlargement of a mucous gland. The fact appears, however, distinctly established by cases which have fallen under my observation; and it is the more important because it immediately suggests the propriety and safety of free incision."

The structure of this tumor appears to be cystic, and this is produced by the enlargement of the lacunæ of the mucous membrane of the vagina; it is filled with a glary fluid, either transparent or of a dirty-brown colour, of the consistency of white-of-egg, which becomes accumulated by the obliteration of the natural duct of the gland. An analogous affection is observed on the nose of many individuals, where the duct of a mucous gland becomes closed, and the secretion accumulates to such a degree that, if not relieved, produces suppuration in the neighbouring tissues.

This tumor prevents copulation, gives rise to a great mucous discharge, but very seldom to hæmorrhage; it causes great irritation to the female, producing involuntary venereal excitement; it is slow in its growth, causes but little pain, and the patient only seeks relief from its inconvenience.

These tumors may be mistaken for prolapsus of the womb. This occurred in a case of Dr. Heming's, and even a pessary was applied. They can be distinguished from it, by there being no opening (*os uteri*) at the lower part of the tumor, by the canal of the vagina remaining as in its natural state, and by the neck of the womb being felt above the tumor. The tumor itself is loosely attached to the surrounding parts; the finger can be placed with ease above it, and with little difficulty the whole body can be brought from the vagina.

They may be mistaken for prolapsus vesicæ. This is a more likely occurrence, because the disease is most commonly situated

beneath the urethra; but the introduction of the catheter will give positive evidence, for the tumor remains after the introduction of the instrument, while it can be felt in the tumor, which disappears after its cavity has been emptied, if it depend upon prolapsus of the bladder.

They may be mistaken for rupture. Mr. Hunter says, "From the obliteration of the ducts of Cooper's glands I have seen a very large tumor, formed at the entrance of the vagina. I once saw one very large, which had been mistaken for a rupture." It can be distinguished from it, however, by not having the impulse given to it on coughing, as in rupture; by the impossibility of its entire return into the abdomen; and by its circumscribed and local enlargement.

Treatment of Polypi in the Vagina.—Those of the first class must either be excised or tied, or they may be tied and then excised; no local astringents or general medicaments are of any avail. The former operation is the one most recommended, on account of the irritation which the ligature frequently sets up, (leading to fearful consequences, from the extension of inflammation and the deposit of pus on the loose cellular tissue of the pelvis). And it is as well to observe here, that operations about the vagina and external genitals very frequently give rise to inflammation of the peritoneum, of a low type, which often terminates fatally.

When polypi of the vagina have attained a large size, the loose walls of the vagina become unable to resist the weight of these bodies, which from their gravity fall down towards the vulva, bringing after them portions of the vagina to which they are attached, and also sometimes the neighbouring organs: for instance, when the tumor is attached to the posterior part of the vagina, it drags it downwards with the rectum on account of their close attachment, so that the mucous membrane of the vagina and the gut itself may form the apparent pedicle, which, if cut, would produce a fistulous opening between the two cavities. If the polypus be situated anteriorly, the bladder may be placed in the same position as the rectum; therefore great care is necessary in operating on these productions.

This is not an imaginary evil, but has been seen in the experience of Lisfranc, who says, "A lady consulted me with a vaginal polypus as large as an egg, two inches and a half above the vulva; it protruded from the canal, but could easily be reduced: I introduced my finger into the rectum, and found a cavity like the finger of a glove, into which I could readily introduce my finger; this terminated in a 'cul-de-sac,' a third of an inch from the body of the polypoid tumor. I dragged the polypus beyond the vulva, and kept my finger in the 'cul-de-sac,' and I excised the tumor." From this example we can fully perceive that, before operating upon these productions, we ought carefully to examine the neighbouring organs, and receive that information of the size and position of the pedicle which such an examination affords.

The treatment of the encysted tumors is either by making a simple incision into the cysts and evacuating their contents, or their entire extraction. Mr. Hunter approves of the former operation; he says, "The opening should be made as nearly as possible in the former opening of the duct; this should be either a crucial incision or round opening made with caustic, which may serve in future for an artificial duct." The simple incision was effective in a case of Dr. Lee's, who says, "that a simple dark fluid escaped from the opening which we made in the most prominent part of the tumor with a lancet; the fluid never collected again, and the patient recovered in a short period."

But sometimes you will find that neither the simple puncture nor the caustic will succeed; the injury inflicted by the operation heals up; the sac continues to secrete its fluid, and quickly accumulates; we are then obliged to dissect the cyst out entire. Dr. Heming performed this operation with great success, and states that considerable hæmorrhage attended it, which however was commanded by plugging the vagina.

3. The mucous membrane of the vagina produces a tumor projecting from the vulva in three different ways.

(1) *By the protrusion of its anterior wall.*—This is usually

produced by the pressure of the bladder and its descent, (vaginal cystocele,) that viscus carrying before it the relaxed mucous membrane of the vagina. This disease occurs in those who have borne many children, and very rarely in the virgin state. It is supposed to depend upon the relaxation of the mucous membrane of the vagina and on the greater distention the bladder undergoes in women than in men.

The symptoms which distinguish this disease are, a feeling of weight and fulness in the vagina accompanied by a mucous discharge, difficulty in walking, and a dragging sensation in the pelvis; there is pain in making water, and the patient is unable to entirely empty the bladder, so that she is obliged to press the bladder from below. If any quantity of course remains after an evacuation, it increases the disease, the protrusion becomes greater, and the catheter is obliged to be used.

On examination, we find the upper portion of the vulva opened, the nymphæ stretched over a roundish globular tumor, corrugated on its surface, unless there is a large quantity of urine in the bladder, when it is tense. The tumor is of a reddish colour, and frequently, after the disease has been of long standing, the mucous membrane resembles hard and rough skin; it possesses an elastic feel, with fluctuation. This tumor is situated at the upper portion of the external genitals, and the entrance of the vagina is below and behind it; the os uteri can be felt above it, and the vagina is free. On introducing a catheter some difficulty is experienced, but when introduced with its concavity downwards, its point can be felt in the tumor, and this distinguishes it from all other swellings.

(2) *Protrusion of the posterior wall of the vagina*.—The rectum, in vaginal rectocele, produces just the same effect as the bladder does in the disease we have been speaking of. "This is," says Dr. Churchill, "invariably a consequence of habitual and prolonged constipation; the accumulated fœces distend the rectum to a great size, and the vagina, being loose and relaxed, offers no resistance; a very little effort protrudes the tumor through the external orifice. In fact, in every case

of constipation we can detect a great protrusion into the vagina, and if the mucous membrane of that be loose, the slightest effort is sufficient to produce the disease.”*

The patient complains of distress in the external genitals, difficulty in walking, with a slight discharge. On examination, a tumor is seen of variable shape at the posterior part of the orifice of the valva; it is hard, and the finger can generally detect scybalæ. The orifice of the vagina is superior and anterior to the tumor, and the uterus is in its natural position. This is a more troublesome disease than the former, for the cause is always producing its effect.

(3) I have seen cases also where the entire mucous membrane of the vagina protruded, which drew down the uterus within the bag formed by the inverted vagina; this organ was of its natural size, and its neck not at all elongated; at the bottom of the tumor is an opening, through which the os could be felt. The patient had a very relaxed vagina, and had borne many children.

In the treatment of the first variety, the great object is to take away the cause which produces the disease. The bladder must be kept entirely empty, and the vagina braced by strong astringents, either in the form of an injection, or a lotion into which a sponge is dipped and introduced into the vagina, or by an astringent bolus made of one drachm of tannin, alum, or iodine, to one ounce of lard and wax, equally mixed, a portion of which is to be introduced into the vagina every night. These remedies, with entire rest in the supine position, will very frequently be adequate to the removal of the disease. This plan ought to be tried perseveringly for some time, and if it does not answer, pessaries of various shapes and sizes ought to be used. Dr. Ragnotta, of Milan, has described one which he has found to answer the purpose well. It is a hollow cylinder of elastic gum, of sufficient length to keep the vagina distended upwards and to protrude slightly through the orifice, and wide enough to prevent the parietes of the vagina escaping

* Op. cit.

below it." If there are any objections to these applications, an operation proposed by Dr. M. Hall for prolapsus uteri must be had recourse to. This consists of diminishing the calibre of the vagina by taking out a triangular portion of the mucous membrane (the base of the triangle being at the orifice of the vagina), and drawing the edges together by sutures; when the cicatrization is complete, the tightened mucous membrane will be found sufficient to support the bladder in its proper situation, which should be kept empty, and the recumbent portion enjoined.

When the rectum is the cause of the displacement, the same indications should be attended to. The constipation must be relieved and the vaginal membrane strengthened; a globular pessory in this case is useful. When the whole membrane protrudes, pessories must be used, and if necessary, the operation recommended by Dr. M. Hall tried on both sides of the vaginal canal. Leeches to the parts before any treatment is applied is found to be very useful, it reduces the inflammation in them, and places them in a better position to be treated. Much reliance ought to be placed in these diseases on astringents, and rest in the supine position, and ought to be well tried before any operation is proposed.

II.—TUMORS OF THE EXTERNAL ORGANS OF GENERATION.

Warty Tumors of the Vulva.

These arise most usually from venereal taint; but that is not always the case, for they proceed from a neglect of cleanliness. They are usually situated on the vulva; sometimes they surround the urethra and clitoris, and are placed between the vulva and nymphæ. When in the latter situation they assume the appearance of red vascular tumors, with their summits divided into a number of small excrescences; but when situated on the vulva they become more like skin, are hard, rough, and have a white horny appearance. They may appear in

a few and distinct patches, or may occupy the whole vulva, extending to the anus, and presenting a tumor of considerable size.

In some cases these tumors are not numerous, and can be got rid of easily; but the habits of some of these patients are such, that they are hardly discovered before they have made considerable progress. They give no pain when untouched, they prevent progression, and give rise to a foetid discharge, which excoriates the surrounding parts, and causes them to become very painful; this is sometimes very profuse. When the crop is large the patient is obliged to continue in the supine position.

Individually these tumors are attached by a pedicle to the skin, which they cause to be œdematous and thickened, but collectively they form one large mass separated by innumerable crevices: their growth is sometimes very rapid, but generally they are slow in their increase. Ulceration may attack them, and an exceedingly foul sore may be the result. I have seen them, by ulceration and irritation around the gut, produce fistula of the rectum.

The treatment of these growths, in the first instance, may be entirely confined to cleanliness; but when they enlarge and become numerous, they must be treated more actively. It has been recommended that they should be tied, and I have tried that treatment in several instances, but have been obliged to discontinue it from the great pain and tediousness of the operation, every wart being tied separately. Savine powder and sulphate of copper, mixed in equal parts and sprinkled on and between the tumor, is often beneficial, and causes the warts to slough off, but it is slow in its action. The nitrate of silver is a very feeble remedy, except when the tumors are small and situated on the more vascular parts, when it is efficacious. But when they are large and placed externally, they must be excised either by the scissors or knife; it gives much less pain in its operation, and entirely removes the morbid growths: the bleeding surface must be dried and quickly rubbed with nitrate of silver; this effectually prevents their return, but great cleanliness must

be insisted on. Very frequently after these operations inflammation spreads rapidly along the vagina, producing great sloughing; and peritonitis may occur. To guard against such accidents, quiet and the supine position should be insisted on, purgatives administered, and the patient carefully watched.

If syphilis is suspected, small doses of the bichloride of mercury may be administered, internally, for by this means their disappearance will be accelerated.

Very near akin to these excrescences are the "tubercle mucieux" of the French nosologists. These are decidedly syphilitic. They may appear, according to some, as a primary symptom, being inoculated by contact, but they are generally supposed to be one of the earliest secondary symptoms produced by syphilis. They are round flattened tubercles, raised above the surrounding tissues, sometimes becoming elongated, of a reddish-blue colour, and frequently ulcerated on their surface, producing a moisture of the parts. They attack usually the inner side of the labia, thighs, mouth, and tongue, and their best remedy is the bichloride of mercury in small and largely diluted doses. Great benefit also arises from the surface being sprinkled with chloride of mercury, or touched with nitrate of silver.

The Oozing Tumor of the Labium.—This is a rare disease, and first described by Sir C.M. Clarke in a very clear and precise manner. It occupies a smaller or larger space on the labium, sometimes extending to the mons veneris. It is but slightly raised from the skin, "and presents the appearance of an œdematous portion of it when a fine piece of netting is applied tightly to it, the surface being unequal, consisting of irregular depressions and eminences; but the tumor itself is not œdematous." This tumor gives rise to a constant profuse watery discharge, which is immediately renewed after it has been made dry. "The secretion from the tumor," says Sir C. M. Clarke, corresponds in appearance with that from the cauliflower excrescence." Its quantity may be influenced by a variety of circumstances, but it always bears a proportion to the extent

of the disease: in damp weather and a debilitated state of the system, it will be found more abundant than when the atmosphere is dry and the constitution vigorous. The disease, having once began, continues to enlarge, and isolated patches of it appear in the neighbouring parts, so that at length they will be found to run into each other." The disease does not attack the young, but principally those who are in advanced life, are fat, and have enlarged labia: this state appears to be quite a predisposing cause. Its colour is that of the surrounding textures. It produces great itching of the part, and sometimes the watery discharge induces excoriation; no blood is seen in the discharge, nor does the tumor bleed on handling.

The treatment is that of complete excision: this was successfully performed by Sir C. M. Clarke. The absorbent powders, as starch, &c., are useful in excoriation: astringent lotions ought to be applied to prevent the increase of the tumor; but excision is the remedy which will cure the disease.

Encysted Tumors of the Labium.—These tumors are met with in the labia, as well as in other parts of the body. They produce inconvenience only from their bulk, are easily distinguished by their round globular form; they are moveable, and the fingers can be inserted under them. They are covered by the mucous membrane and skin, which they do not discolour. Their size often increases to such a degree as to be inconvenient to motion; they must then be removed entire; and this is done by carefully raising the mucous membrane above them, and detaching it from the connexions it has with the tumor. These tumors may be mistaken for hernia.

Tumors at the orifice of the Urethra.—This is by no means an uncommon disease; it is met with in the young and old. Sir C. Clarke states, that in every instance he had met with the patients had been young women: but the largest tumor of the sort I ever saw was in a woman above forty; and I have now one under treatment much above that age. It occurs as frequently in the single as in the married, and gives rise to a great deal of annoyance and much alarm; it produces

a mucous discharge, is exquisitely tender to the touch, and bleeds on slight handling: it seldom acquires a large size, but I have seen one as large as a date. Its sensibility is so great, that it prohibits copulation in the married: this is almost a characteristic sign, and one which directs the patient's attention to the disease.

On examination, a small projecting tumor is found, attached to and surrounding the edge of the meatus urinarius, varying in size from a pea to a nut or filbert; it is of a florid red colour, and is frequently divided at the extremity. The same morbid growth may be seen passing down on each side the nymphæ. The tumor is extremely sensible, but its sensibility is confined to itself, the neighbouring parts being free: it is quite moveable, and is found to be attached to the edge of the meatus urinarius; at other times it passes down and involves the mucous membrane of the urethra, even as far as the bladder.* It appears to be made up entirely of vessels and their connecting cellular tissue.

The symptoms it gives rise to are those usually produced by stone; great pain is felt on making water, especially after the escape of the last drops. One patient I saw had pains down the inner side of the thighs to the knees; and Professor Simpson told me of one case where pains in the soles of the feet were complained of. There is frequent desire to pass urine, and the bladder is unable to retain it for any length of time: pains in the back are troublesome, and there is bearing down pain in the perineum. The discharge attending this disease is of a mucous character, and is only an increase of the natural discharge; it is not very profuse, but sufficiently so to keep the parts moist.

Treatment.—Many authors recommend astringent lotions of the sulphate of zinc, and state that they have been successful; others use caustic, and I have seen great good done by its application—in one case the tumor was entirely removed. But they frequently return after these remedies, and the only

* See Hemming's Transl. of Madame Boivin and Dugés.

effectual mode of removing them is by excision, followed by a free application of the caustic potash. Hæmorrhage frequently follows excision, and sometimes to an alarming extent; it occurred to such a degree in one case at which I assisted at the operation, as to require that both the vagina and urethra should be plugged, in order to stop it: the patient did well. From this circumstance the ligature has been proposed instead of the knife, and we are sometimes able by this means to attack the whole tumor; but if this is not done the tumor is sure to be again produced. I have lately met with a case, which was large, and surrounded the whole orifice of the urethra, and extended some way down its internal membrane: here both incision and caustic would have failed; I therefore had recourse to another plan, and that was, by placing a catheter in the bladder, and encircling the tumor and the catheter with a fine piece of whipcord, so that the tumor around the orifice of the urethra was strangulated between the whipcord and sides of the catheter. Cold astringent lotions should be used after the operation for some time, and rest and quiet enjoined, in order to obviate the chances of after inflammation.

When these vascular tumors extend far down the urethra, which they sometimes do, even to the bladder, a large bougie is the only thing to be relied on, smeared with some astringent ointment; but a catheter is better, on account of its retention in the bladder. Madame Boivin and Dugés say that this treatment alone has frequently succeeded under their hands.

There is one disease with which the foregoing disorder may be confounded, and that is the hernia of the mucous membrane of the urethra. "This," says M. Lisfranc, "may produce a tumor of considerable volume; its colour is sometimes dark red, sometimes of a pale red, and sometimes it offers a pinkish-greyish aspect." In all women the mucous membrane protrudes to a small distance beyond the edge of the urethra, and is collected around it by numerous folds. When by any cause the lining membrane becomes relaxed and loosened, these folds are increased, inflammation is set up, and the mucous

membrane soon becomes puffed up, tumified, and swelled with blood and serosity; it then appears like one of these vascular tumors. When taken between the fingers, and gradual, careful, and continued pressure is applied, it loses part of its volume, and then we are able to reduce it within the urethra. This may remain, but more frequently returns and becomes large; it cannot be reduced by the fingers: a catheter ought to be introduced into the bladder, and kept there; astringent lotions, viz. that of nitrate of silver, &c. may be ordered, and the supine position enjoined. If it resist this treatment, and the tumor is large, we must incise it. In some rare cases the bladder itself has protruded through the urethra.

The Tumor of the Urethra, arising from a thickened state of the cellular tissue, and a varicose state of the vessels of the part.—This disease was first described by Sir C. Clarke, and its occurrence is not common. It arises in married women, especially after labour. Dr. Ashburner related to me a case which occurred to a single woman, pregnant, ere the tumor before delivery was so large as to protrude considerably from the vagina. The drawing which was taken of it presented a globular and rather elongated tumor, surrounding the urethra, of a blueish tint, and apparently composed of varicose veins: this became much enlarged during labour, and was temporarily relieved by the bursting of some of its vessels. After labour there remained a hardened tumor, greatly reduced in size from the former one, but became increased on the erect position. The patient's attention is usually directed to the disease from pain during coition; there is also a sense of weight and heaviness in the parts peculiar to varicose veins; there is a slight mucous discharge, and micturation is painful.

On examination, there is observed a globular tumor just behind the pubis, of a blueish appearance, and covered by the natural mucous membrane; it enlarges when the patient is erect, and decreases on her lying down; pressure also reduces its bulk. When the disease has existed some time, a small pouch is liable to be formed in the urethra, close by its orifice,

which retains a few drachms of fluid after the bladder is evacuated. This complication produces great irritation, and a constant desire to make water: after micturation the pouch can be emptied by pressure from below.

Treatment.—The cure of this troublesome disorder consists in partially relieving the distended blood-vessels, and the attempt to cause their contraction. The first indication is carried out by leeching the tumor and puncturing the enlarged veins; the horizontal posture must be enforced, and astringent lotions used. Sir C. Clarke recommends a piece of candle to be introduced into the vagina, or some lint rolled up and saturated with an astringent lotion, in order to produce pressure on the distended parts. The loss of sleep, which often accompanies this disorder, must be relieved by sedatives, and mild tonics must be given to renew the strength.

Enlargement of the Clitoris.—This organ may either be congenitally deformed, or become the seat of organic disease. In the former case it does not exceed two inches, is much thickened, and retains its proportional size in after life. When this enlargement exists, and is complicated with defective development of the vagina, it produces the variety misnamed hemophodism. Besides this congenital malformation, the clitoris is liable to morbid hypertrophy, and may increase to a considerable size. Dr. Merriman gives an instance of the amputation of a clitoris in Mercer Hospital, Dublin, “which in volume was equal to the head of a child two years’ old.” In St. Bartholomew’s Hospital Museum is a preparation (No. 26, series 26) of a clitoris, enlarged into a mass of two inches in diameter “by the growth of a firm, pale, and obscurely fibrous substance, traversed by glistening bands: in the interior of the growth there are several cavities or cysts of irregular forms, whose cavities are nearly filled with groups of small bodies, attached by narrow pedicles to the internal surface of their walls.

In the Museum of King’s College there is a preparation (M. 19a), where the nymphæ and clitoris are enlarged, some-

what similar to elephantiasis. The description of the tumor is as follows: "It has a rough appearance, and made up of a number of distinct enlarged tubercles, like the structure of elephantiasis: the clitoris is about 3 inches long and 1 thick."

The cause of this hypertrophy was considered to be produced from the great natural or unnatural excitement of the parts; but M. Parent Duchatelet states, that out of 6000 prostitutes of Paris, only three had the enlargement of the clitoris, "and none of them had distinguished themselves for extraordinary abandonment to sexual gratification: on the other hand, the clitoris was found of the natural size in females of the most unbridled passions."

The primary symptoms are slight. The disease may produce no disagreeable symptom; but when the substance has increased, the part becomes extremely sensible, every motion of the body increases that sensibility and excites venereal desires, keeping the patient in the greatest state of excitement; the parts become excoriated, and pain is added to venereal desire.

Tumors are sometimes developed in the prepuse of the clitoris. There is a specimen of this kind in the Museum of the Royal College of Surgeons,* which represents the external organs of a female, in whom a large lobulated tumor apparently originates in the pressure of the clitoris.

The clitoris is often attacked with scirrhus disease: when this occurs it is usually accompanied with cancer in the uterus or its appendages; the glands in the groin soon enlarge, and the patient dies.

Treatment.—In all these cases the treatment is only confined to excision, for we are unable by any medical treatment to reduce the tumor, as its bulk becomes a source of the continuance of the disease. When the tumor is not large, and possesses morbid sensibility, a few leeches may be applied to the groins or the inner side of the thighs, and the parts ought to be bathed with cold lotions containing acetate of lead.

* Heaviside, 1446, *Vagina* 4.

The patient should be kept cool, and cooling medicines administered with those which add to the strength.

The labia are subject to great enlargement from blows, and the consequent effusion of blood. When I was house-surgeon to the University College Hospital, a woman was brought into it who had been kicked by a cow. I found the right labium greatly distended, to the size of two fists placed together, but there was no bleeding at the time: I found a long wound on the inner surface of the labium, and ascertained that the enlargement arose from effusion and coagulation of blood. I immediately turned out the coagula, and secured three arteries which bled profusely, ordered great attention to cleanliness, and in four days the wound healed.

Sometimes an erectile tumor is observed in the labium. This may occur in single women, but is greatly increased when they become pregnant. The structure of this growth is the same as those in other parts: it may be confined to one side of the vagina, or extend to the other. It is increased during pregnancy, or when the patient is in the erect position: it has a soft crackling feel, and appears hotter than the surrounding parts. During labour some of the vessels may give way, and a large quantity of blood be discharged.

This disease is difficult to cure, because in the majority of cases it is extended over a large surface; when it is circumscribed it can be tied, and a cure anticipated. It can be restrained by the horizontal position and the application of cold lotions.*

The nymphæ may become subject to chronic inflammation and induration. In the Museum of the Royal College of Surgeons, *Vagina 5* is a good specimen of the disease; also *Vagina 7* displays two nymphæ of large size, which have been removed. Mr. Hunter (413) also has described a preparation, "where the nymphæ are like healthy skin, but lobuled and wrinkled: the right is more than four times as large as the left; it is

* An interesting case of this kind is reported by Dr. Lever, *Guy's Hospital Reports*, vol. vii. p. 136.

of an oval form, measuring three inches in length, and an inch and a half in thickness. It is composed of a uniform, pale, dense, skin-like texture; its surface is coarsely wrinkled and warty, and it is covered by the cuticle." In these cases nothing but extirpation can cure this disease, and frequently this fails.

APPENDIX.

TABLE

A Table of all the known Operations

No.	Date of Operation	Operator.	Age.	Length of Incision.	Adhesions or not.	Error of Diagnosis or not.	Complication with other diseases.	Character of the tumor, cystic or not.	Cause of death.
1		L'Aumonier		4 in.				Abscess of the ovary after delivery, cyst.	
2	1809	Dr. M'Dowal		9 in.	None			Cysts	
3		Do			Adhesions	Not removed.	Both ovaries affected.	Cysts	
4	1816	Do			None			Scirrhus ovary	
5	1817	Do			None			Scirrhus ovary	
6	1819	Do			Adhesions			Cysts with bone and hair.	Peritonitis
7		Dr. Chrismar, or		Long					
8		Chrysmar		Long					
9	1819	Do	47	Long	Adhesions			Cartilaginous & cardaceous tumor.	Gangrene of Intestines.
10	1820	Do	38		Adhesions			Fibrous & cellular tumor.	
11	1820	Do	38		Adhesions		Tubercular liver, scirrhus mesenteric glands.	Lardaceous & cysts.	Peritonitis & Gangrene
12	1821	Dr. N. Smith, (Connecticut)	33	3 in.	Adhesions			Cystic.	
13		Do		Unknown		Not removed.	Disease of the uterus.	Uterine tumor.	
14		Do		Unknown	Adhesions	Not removed.		Cyst.	
15	1823	Dr. A. G. Smith	30	Long				Cyst.	
16		Do		Unknown					
17		Do		Unknown					Secondary hæmorrhage
18		Do & M. M'Dowal		Long		No tumor.		Conglomerat. Intestines.	
19	1823	Mr. Lizars	27	Long		No tumor.			
20	1825	Do	36		None			Ovarian tumor.	
21	1825	Do	25		Adhesions		The other ovary diseased	Ovarian tumor.	Gangrene of the peritoneum
22		Do	34			Not removed.		Solid and vascular tumor.	
23		M. Dzondi		Unknown					
24		Galenzowski	27	Long, 5 in.	Adhesions	Not removed.		Multilocular cyst.	
25		Dr. Quittenbaum		Long					

(No. 11.)

of Ovariectomy, from 1809 to 1846.

Time of death after operation.	Result.	Remarks.	References.
	Recovered.		Edin. Med. Surg. Jour. vol. xviii. p. 532.
	Recovered.	Cyst opened, dirty gelatinous fluid withdrawn, and sac removed. Wound 3 in. to the left of rectus muscle.	American Jour. of Med. Sciences, from Eclectic Repertory, p. 261. Jan. 1845.
	Recovered.	Both ovaries affected, cysts opened, bloody and gelatinous matter escaped, adhesions to bladder and uterus, incision in the same place. See note.	Ibid.
	Recovered.	Incision in linea alba.	Ibid.
3rd. day	Recovered.	Profuse hæmorrhage.	Ibid.
	Died.	Incision on the left side.	Ibid.
	Recovered.		Monthly Jour. of For. Med. vol. iii. p. 440. Phila. 1829.
36 hours	Died.		Ibid.
	Died.	Extensive adhesions to colon, stomach, and peritoneum; one gallon of yellowish green serum in the abdominal cavity.	
	Recovered.	Afterwards became pregnant, 8 years after the operation.	Ibid.
36 hours	Died.	Diseased and deformed from infancy, tumor varicose, pedicle 4 inches in thickness. Ascites.	Ibid.
	Recovered.	Emptied the cyst and removed it, it weighed two or three ounces.	Edin. Med. & Surg. Jour. vol. xviii. p. 532. (Amer. Med. Rec. vol. v. p. 124, also Dub. Jour. vol. xxv. 1844. p. 382.)
	Recovered.	Uterus was the most voluminous part of tumor.	Med. & Surg. Memoirs, by N. Smith, edited by N. R. Smith, p. 231.
	Recovered.	Sac emptied, but too adherent to be removed, slight peritonitis, sac and abdomen again filled.	Ibid.
	Recovered.	Emptied the cyst, drew out the sac, tied its pedicle, and removed it.	North Amer. Med. Jour. Jan. 1826. New York Jour. of Med. Sept. 1843, p. 169.
	Recovered.		
42nd. day	Died.	The animal ligature used, gave way prematurely.	Ibid.
	Died.	The patient tapped herself 90 times.	Ibid.
	Recovered.	Deceived by great obesity and distended fullness of bowels.	Lizars on Extraction of Ovary.
	Recovered.	Some hæmorrhage, other ovary diseased, but left.	Ibid.
2 or 3 days	Died.	Tumor weighed 7 lbs.	Ibid.
	Recovered.		Ibid.
	Recovered.	By incision, the use of tents, and subsequent extirpation of the mortified cyst.	North Amer. Jour. of Med. Science, vol. xxxv. 1845. Atlee's Table.
	Recovered.	Opened the tumor, tore up the cells, fixed it by ligature to the wound, and obtained a perfect cure.	Jeaffreson's Essay, Lond. Med. Gaz. 1844-5, p. 81.
	Recovered.		Philips' Tables, Med-Chir. Trans. vol. xxvii. p. 672.

No.	Date of Operation	Operator.	Age.	Length of Incision.	Adhesions or not.	Error of Diagnosis or not.	Complication with other diseases.	Character of the tumor, cystic or not.	Cause of death.
26	1826	Dr. Granville		Long, 9½ in.	Adhesions	Not removed.		Cyst.	
27	1827	Do	30	Long, 9 in.					
28	1826	Dr. Martini	24	Long, 9 in.	Adhesions	Not removed.		Cartilaginous tumor, with cysts.	Hæmorrhage
29	1828	Dr. Dieffenbach	40	Long	Adhesions	Not removed.		Tumor highly vascular.	
30	1829	Dr. D. L. Rogers	20	Long	Adhesions			Cyst.	
31		A case in Froriep's Notizen. Anonymous.	48	Long	Adhesions	Not removed.		Cyst.	
32		Dr. Ritter	31	Long	None			Cyst.	
33	1830	T. C. Warren	40	Long	None			Scirrhus tumor.	Hæmorrhage
34	1833	Mr. Jeaffreson	40	Minor, 1½ in.	None			Cyst.	
35	1834	Mr. King	40	Long, 7 or 8 in.		No tumor.			
36	1836	Do	37	Minor	None			Cyst.	
37		Do		Minor		Not rem.		Omentum tumor.	
38	1836	M. Dolhoff	23	Long				Cyst.	Peritonitis
39		Do	27	Long	None	Not removed.		Solid tumor.	
40		Do	28	Long	Adhesions	No tumor.			
41	1836	Mr. West	45	Short, 2 in.	None			Cyst.	
42		Do	23	Short				Cyst.	
43		Do	24	Short			Shattered constitution	Cyst.	Sunk after operation.
44		Do	40	Short	Adhesions	Not removed.		Cyst.	
45		Mr. Hargraves	40	Short	Adhesions	Not rem.		Multilocular cyst.	
46	1840	Mr. B. Phillips	21	Short	None		Ulceration of the bowels of long standing.	Cyst.	Inflammation of mucous coats of the bowels.
47	1841	Dr. Stilling	22	Long, 6 in.	None				Hæmorrhage
48	1842	Dr. C. Clay	46	Long	Adhesions			Solid & fluid.	
49	1842	Do	57	Long, 14 in.	Ext. Adhes.			Cysts.	
50	1842	Do	39	Long, 28 in.	do			Cysts.	
51	1843	Do	47	Long, 16 in.	do	Not rem.		Anomalous.	Inflammation
52	1843	Do	45	Long, 14 in.			Disease of the uterus.	Fleshy tumor of uterus.	Hæmorrhage
53	1843	Do	40	Long, 14 in.	Ext. Adhes.			Cyst.	Hæmorrhage
54	1843	Do	22	Long, 14 in.	Adhesions			Cysts.	
55	1843	Do	40	Long, 14 in.	None			Cysts.	Inflammation
56	1843	Do	43	Long, 14 in.	Ext. Adhes.			Cysts.	
57	1843	Do	59	Long, 16 in.	Ext. Adhes.			Cysts.	Exhaustion
58	1843	Do	45	Long, 14 in.				Hydatid.	
59	1843	Do	58	Long, 8 in.				Pelvic tumor.	
60	1843	Do		Long, 16 in.	Ext. Adhes.			Tumor.	
61	1844	Do	49	Long			Disease of uterine.	Uterine tumor.	
62	1845	Do	35	Long, 14 in.	None			Cystic with solid matter.	
63	1846	Do	51	Long	None			Cystic.	

Time of death after operation.	Result.	Remarks.	References.
3 days	Recovered.	Very adherent, incised largely and carefully emptied.	Churchill's Notes. <i>Dubl. Jour.</i> vol. xxv. 1844, p. 383.
	Died.	Death attributed to venesection, under the false alarm of peritonitis.	<i>Ibid.</i> & <i>Med. Gaz.</i> Jan. 13, 1843.
36 hours	Died.	Inseparably connected with the brim of the pelvis; removed a sacculated portion of it.	Churchill's Notes. <i>Rust's Magazine.</i>
	Recovered.	Startled at the size of the base of the tumor, and flow of blood on puncturing it. Operation abandoned on account of adhesions.	<i>Amer. Jour. of Med. Science</i> , vol. v. 1829-30. <i>Rust's Mag.</i>
6th day	Recovered.	Cyst unintentionally opened, emptied, relieved of very extensive adhesions, and removed.	<i>New York Med. & Phy. Jour.</i> Jan. 1830, p. 285. <i>Amer. Journ. of Med. Science</i> , vol. v. 1829-30, p. 549.
	Died.	Had been tapped 5 times in 6 months, had a broad base, and not removable from the os innominatum.	Churchill's Essay. From Froriep's <i>Notizen.</i>
On the table.	Recovered.	First tapped, and two weeks after removed the ovary.	Churchill's Essay.
	Died.	Ligature slipped.	<i>Surg. Obs. on Tumors</i> , by T. C. Warren, p. 590.
	Recovered.	Cyst emptied of 27 pints, drawn out and removed.	<i>Trans. Prov. Med. Assoc.</i> vol. v. p. 239.
	Recovered.		Churchill's Essay.
	Recovered.	Cyst, with a solid base, 27 pints of fluid evacuated, sac drawn out and excised below the ligature.	<i>Lancet</i> , Jan. 21, 1837, p. 586.
	Recovered.		<i>Med.-Chir. Trans.</i> Vol. xxvii. p. 473.
2 days	Died.	Cyst emptied of 15 pints and removed.	<i>Trans. Prov. Med. Assoc.</i> vol. v. p. 245.
	Died.	Declined removing it, being solid and fixed in the pelvis by adhesions.	Churchill's Essay.
8 hours	Recovered.		<i>Ibid.</i>
	Recovered.	Cyst emptied of 20 pints, drawn out and removed. Simple cyst, Prep. in St Bartholomew's Museum.	<i>Lancet</i> , Nov. 25, 1837, p. 307.
	Recovered.	Cyst emptied of 24 pints and removed.	<i>Lancet</i> , Oct. 14, 1839.
	Died.		<i>Ibid.</i>
	Recovered.	Not removed on account of adhesions, had to be tapped afterwards.	<i>Lond. Med. Gaz.</i> 1844-5. p. 86.
	Recovered.	Not removed on account of adhesions.	<i>Ibid.</i>
6th day	Died.	Died of the disease, not the operation.	<i>Ibid.</i> Oct. 9, 1840.
	Died.		<i>Brit. & For. Rev.</i> Churchill's Essay.
	Recovered.	Incision 27 inches, tumor 28 lbs.	<i>Medical Times</i> , No. 160.
	Recovered.	Extensive adhesions, tumor 24 lbs.	<i>Ibid.</i> No. 161.
7th. day	Recovered.	Tumor 73 lbs., very extensive adhesions.	<i>Ibid.</i> No. 162.
	Died.		<i>Ibid.</i> No. 163.
Immediately.	Died.	Tumor and entire uterus, except the cervix, removed.	<i>Ibid.</i> No. 164.
	Died.	Ovarian tumor 26 lbs.	Churchill's Essay.
36 hours	Recovered.	Tumor 26 lbs.	<i>Ibid.</i>
36 hours	Died.		<i>Ibid.</i>
32 hours	Recovered.	Tumor 31 lbs.	<i>Ibid.</i>
	Died.	Tumor 54 lbs.	<i>Ibid.</i>
10th. day	Recovered.		<i>Ibid.</i>
	Died.	Dr. Clay says she recovered from the operation.	<i>Ibid.</i>
3 weeks	Recovered.	Tumor weighed 26 lbs.	<i>Ibid.</i>
	Died.	Uterus and ovaries were removed.	<i>Ibid.</i>
	Recovered.	Solid tumor 9 lbs., fluid and solid 53 lbs., evacuated the cysts before extraction, patient returned into Wales 15 days afterwards, subject to the disease 10 or 12 years.	<i>Medical Times</i> , No. 282, Feb. 15, 1845.
	Recovered.	Well 17 days after the operation.	<i>Medical Times</i> , No. 333, Feb. 14, 1846.

No.	Date of Operation	Operator.	Age.	Length of Incision.	Adhesions or not.	Error of Diagnosis or not.	Complication with other diseases.	Character of the tumor, cystic or not.	Cause of death.
64		Dr. C. Clay		Large					
65		Do		Large					
66	1842	Mr. Walne	58	Long	None			Cysts, with solid tumor.	
67	1843	Do	57	Long	None			Cysts.	
68	1843	Do	20	Long	None			Cysts.	
69	1843	Do	54	Long	Ext. Adhes.	Not rem.		Cyst.	
70	1844	Do	45	Long	None		Uterine disease.	Cysts solid and fluid.	Tumor of Uterus resting against incision.
71		Mr. W., (B-k-s-w)		Long	None		Exhaustion before operation.		Peritonitis. Exhaustion after 8th day. Great tympanitis.
72		Chrismann		Large	None				
73		Mr. Crisp		Unknown				Cyst.	
74	1843	Mr. Morris, (Rochdale)		Large					
75	1843	Mr. Southam	37	Long	None			Cystic sarcoma.	
76	1845	Do	38	Large 6 or 7 in.	None			Cystic.	
77	1843	Dr. F. Bird	35	Small, 4½ in.	None			Cysts.	
78	1843	Do	21	Small, 5 in.	None			Cysts and solid matter.	
79	1844	Do	35	Large, 8 in.	Strong			Cysts and colloid disease.	
80	1844	Do	21	Small, 3 in.	None			Cysts.	
81		Do	21	Small, 5 in.	Adhesions strong			Multilocular thick cyst.	
82	1846	Do	52	Short, 5 in.	Strong pelvic adhesions			Cystic very thick and filled with cholestrine.	
83	1843	Dr. T. L. Atlee	29	Long	Adhesions			Cysts & hydatids.	
84	1844	Do	42	Long	Adhesions		Disease of uterus.	Fibrous tumor of uterus.	Hæmorrhage
85	1843	Mr. Heath	40	Long			Disease of uterus.	Fibrous tumor of Uterus.	Hæmorrhage
86	1843	Mr. Lane	28	Short, 5 in.				Cyst.	
87	1843	Do	45	Large, 8 in.	Adhesions			Cysts and solid.	
88	1844	Do	38	Large, 7 in.	Adhesions			Multilocular cyst.	
89		Do		Large, 7 in.	Adhesions			Multilocular cyst.	
90		Do		Small	None			Multilocular cyst.	
91		Do		Large	Extension			Multilocular cyst.	Peritonitis
92	1843	Mr. Key	19	Long	None			Multilocular cyst.	Peritonitis
93	1843	Mr. Greenhow	29	Long	Adhesions		Disease of Stomach.	Cysts, with a dense vasculo-cellular tumor.	Peritonitis
94	1843	Mr. B. Cooper	32	Long	Adhesions		Malignant disease of uterus.	Solid and cysts.	Peritonitis
95	1844	Dr. W. L. Atlee	61	Long	None			Bilocular cyst.	Insidious Peritonitis
96	1844	Do	24	Long	None		Uterus diseased.	Fibrous tumor of uterus.	
97		Ehrhartstein	36	Large	None			Solid and cysts.	

Time of death after operation.	Result.	Remarks.	References.
	Recovered. Recovered. Recovered.		The particulars of both these unpublished cases were kindly given me by Dr. Clay. Churchill's Essay, and Med. Gaz., Aug. 11, 1843, p. 699.
	Recovered. Recovered. Recovered. Died.	Narrow escape, followed by phlegmasia dolens. Tumor 28 lbs Fibrous tumor of uterus, resting against incision, was supposed to have produced inflammation and death.	Ibid. Oct. 13, 1843, p. 47. Ibid. Feb. 23, 1844, p. 686. Ibid. March 10, 1844, p. 783.
6 days	Died.		Unpublished.
	Recovered. Recovered. Recovered.	Tumor 8 lbs. Recovered in 6 weeks. Afterwards pregnant.	Psaff's Journ. vol. xii. part i. Lancet, Dec. Churchill's Essay from the Manchester Courier. See note.
	Recovered.	Ligature drawn into the abdomen, but incision entirely healed.	Med. Gaz. 1843.
	Recovered.	The ligature came away on the 49th day. Left ovaries tapped and extracted.	Prov. Med. and Surg. Journ. Sept. 10, 1845. Med. Gaz. May 26, 1846.
	Recovered.	Sac punctured, drawn out, the pedicle tied, sac removed.	Lond. Med. Gaz. March 22, 1844, p. 832.
	Recovered.	Incision 5 inches, cyst emptied, withdrawn, and excised, no pedicle.	Ibid. Dec. 29, 1843, p. 409.
	Recovered.	Many adhesions, sac emptied of a firm gelatinous matter, excised tumor 35 lbs.	Ibid. Aug. 18, 1843, p. 732.
	Recovered.	Followed by slight peritonitis.	Ibid. Dec. 8, 1843.
	Recovered.	Case not published, but given to me by Dr. F. Bird.	Not published.
	Recovered.	Cyst tapped and extracted: there was no pedicle; and a small section of the uterus was removed with it.	Not published, but particulars given me by Dr. F. Bird.
5th. day	Died.	Both ovaries removed. 4 uterine tubercles, with thick vascular pedicles, extensive adhesion, hemorrhage from slipping of ligature.	Am. Med. Journ. Jan. 1846, p. 44. Ibid. vol. xxxv. 1845, p. 335, Atlee's table.
17 hours	Died.	The uterus and all were removed.	Med. Gaz. Dec. 8, 1843, p. 309.
	Recovered. Recovered. Recovered.	Phlegmasia dolens followed the operation. Two cysts emptied before removal. Cysts emptied before removal, the cyst sessile, and firmly attached to the fundus and neck of the uterus.	Ibid. 1844-45, p. 84. Med. Gaz. 1844-5, p. 84. Jeafferson's table.
	Recovered. Recovered.		Philips's table. Not published.
	Died.	Adhesion to liver, suprazenal capsule. Ascending vena cava. Kidney and intestines posteriorly. No adhesions anteriorly.	Unpublished. The particulars of both these operations were kindly given me by Mr. Lane.
9th. day	Died.	Large vessels on tumor.	Guy's Hospital Reports, Oct. 1843, p. 473.
7th. day	Died.	For 4 years previously had uterine hæmorrhage.	Med.-Chir. Trans. vol. xxvii. p. 88.
	Died.	A portion of the omentum was included in the ligature.	Ibid. vol. xxvii. p. 76.
6th. day	Died.	Colon involved in a broad pedicle: both ovaries diseased.	American Med. Journal, July 1844, p. 43.
	Recovered.	Thick fleshy pedicle, followed by violent peritonitis: intestines troublesome.	Ibid. April 1845, p. 309.
	Recovered.	Tumor tapped before extracted.	Med.-Chir. Trans. vol. xxvii. p. 473. Philips's table.

No.	Date of Operation	Operator.	Age.	Length of Incision.	Adhesions or not.	Error of Diagnosis or not.	Complication with other diseases.	Character of the tumor, cystic or not.	Cause of death.
98		Dr. Hopser	47	Large	Adhesions			Solid tumor.	
99		Do	38	Large	Adhesions			Solid tumor.	
100		Macdonald		Large	None			Cysts.	Hæmorrhage
101		Groth		Large					
102		Morgan		Small, 1½ in.	Adhesions	Not removed.			
103		A. B.		Long	Adhesions	Not removed.			
104		C. D.	22	Small		No tumor.			
105		E. F.		Large	Adhesions				
106		G. H.		Large					
107		Case in Gooch		6 inch.		No tumor.			
108	1844	Dr. Bowles	29	Long	Adhesions			Solid tumor.	
109	1844	Prof. Webster	37	Long	Adhesions	Not removed.		Cyst.	
110	1845	W. B. Page	33	Small, 4 in.	None			Cysts.	
111	1845	John Dicken	18	Large, 14 in.	Extensive, but cavity broken down.			Multilocular cyst.	
112	1846	Dr. Handyside	20	Large				Cyst.	Ileus and phlebitis of the lower limb.
113	1846	Mr. Solly	20	Short, 4 in.	None			Unilocular cyst of right ovary.	Hæmorrhage from slipping of the ligature.
114	1846	Dr. Protheroe Smith	39	Large	None		Chronic peritonitis.	Multilocular.	Shock of operation.
115	1846	Mr. Arrowsmith, (Shrewsbury)	22	Short	Very extensive	Not removed.		Multilocular.	
116	1846	H. E. Burd, (Shrewsbury)	26	Long	None			Multilocular.	
117	1846	Mr. W.		Long					
118	1846	Cæsar Hawkins	18	Small, 3 in.	None			Unilocular.	

a Case 1. From the American Journal of Med. Science, Vol. xxxv. 1845, p. 262. Still continues to enjoy good health.

Case 2. Dr. M'Dowall states, that he thought his patient well of her disease: "but she informed me a short time since that it had been growing for the last 12 or 18 months, and says it is now about the size it was when I opened her six years ago.

Case 4. "She recovered happily, but I am told her health is not good, the account I had of her was awkwardly given; from what I could learn, her complaint is hysterical.

b I have been unable to obtain the monthly Journal of Foreign Medicine, Vol. III. p. 440. Phil. 1829, but presume these five operations to be correct, having extracted them from Dr. Atlee's Table. Amer. Jour. Med. Science, April, 1845, p. 330.

c The anonymous of Dr. W. L. Atlee's table.

d I feel greatly indebted to the politeness of Dr. Clay, in giving me a corrected list of the operations he has already performed. I am also authorized to mention, that Dr. Clay says in a note to me: "I took a survey of the state of all my successful cases for my particular friend, Prof. Simpson of Edinburgh, and found them all in the enjoyment of better health (since the operation) than for many years previously."

e Cases 52 and 61. These cases I have authority for stating, were not operated on "as ovarian." This was the application of the same operation to disease of the uterus, which, though not successful, ought not to be included in the statistics of Ovarian operations." Dr. Clay's note.

f Case 71. This case has not been published, but was related to me by the nurse who was present at the operation. Also at the Office for the Register of Deaths.

g Case 73 has been disputed, on account of the authority it was originally taken from, viz. the Manchester Courier; but I have authority to state, that Mr. Morris did operate on a patient, and was successful.

h Case 75. "On referring to the report of my former patient," says Mr. Southam, "it will be found that the tympanitis and obstinate vomiting which supervened on the operation, caused the ends of the ligatures to be drawn within the abdomi-

Time of death after operation.	Result.	Remarks.	References.
30 hours	Died.	Ascites.	Med-Chir. Trans. vol. xxvii. p. 473.
	Recovered.	Malignant tumor.	Ibid. [Philips's table.
16 hours	Recovered.	Tumor 22 lbs.	Ibid.
	Death.	A portion of fluid removed before extraction: 2 lbs. of blood found in the pelvis.	Ibid. Psaff's Journal.
	Death.		Philips's table; and from Dr. F. Bird, who saw the operation.
	Died.		Philips's table.
	Recovered.		Ibid.
	Recovered.		Ibid.
	Death.		Ibid. A case unpublished.
	Recovered.		Western Lancet, Oct. 1846.
	Recovered.	Not removed on account of adhesion. The patient rapidly recovered from the operation, after the peritoneal cavity had been exposed for two hours; but the disease progressed, and she died from it in about 2 months.	Not reported. American Journal of Medical Science. Atlee's table, vol. Lv. p. 335, 1845.
	Recovered.	Tapped and extracted.	Lancet, April 5, 1845, p. 397.
	Recovered.	The ligature came away in 3 weeks. Each artery was tied separately. The whole pedicle was not included. Left ovary healthy.	Provincial Med. and Surg. Journal for Oct. 7, 1845.
70 days	Died.	Both ovaries diseased and extracted.	Edinb. Med. and Surg. Journ. 1846.
11 hours	Died.	A portion of the pedicle, containing the fall tube, slipped from the ligature, and gave rise to hemorrhage; left ovary diseased.	Chemical Lecture. Lond. Med. Gaz. July 10, 1846.
4 hours	Died.	Tumor weighed 20 lbs.; fluid 10 lbs.	Unpublished, but at which I was present.
	Recovered.	An exploratory incision was made of a few inches in extent, but the adhesions were found to be so strong and extensive that the operation was considered unjustifiable. The patient recovered without any untoward symptom.	Unpublished; and the particulars given to me by T. Y. Arrowsmith, Shrewsbury.
	Recovered.	The weight of the tumor, with its fluid and solid portions 50 lbs. The patient was pregnant of about 3 or 4 months' standing, and aborted forty hours after the operation.	Unpublished; and the particulars given to me by H. E. Burd, Shrewsbury.
	Recovered.		Unpublished.
	Recovered.	Ligatures came away from the 22d to the 25th day: the wound entirely healed on the 29th day.	The particulars kindly given to me by Mr. Cæsar Hawkins of St. George's Hospital. Med. Gaz. Oct. 30, 1846.

nal cavity; the wound had perfectly healed, and the patient was restored to health, whilst they were still in the abdomen. After several weeks had elapsed, a small abscess appeared at the lower part of the cicatrix, an opening into which gave exit to a quantity of healthy pus and the ligatures. A free discharge was promoted by poultices for a few days, and at the end of the week the wound closed. No constitutional disturbance occurred, and there has not been the slightest interruption to the most perfect state of health since the termination of the report. The catamenia appeared with the greatest regularity, and in the same quantity as previously to the commencement of the disease. There is a tendency to corpulency, which is in a great measure checked by her active habits." Provincial Med. and Surg. Journ. Sept. 10, 1845.

¹ All Dr. F. Bird's cases are doing well.

^k All Mr. Lane's patients are doing well; he gave me the account of the two unpublished cases.

^l Case 102. This case was operated upon by Mr. Morgan of Guy's Hospital, and is the same as the one reported as by Dr. Ashwell, and "Guy's Hospital," in Dr. W. L. Atlee's Table. Amer. Jour. of Med. Science, Vol. xxxv. 1845, p. 333.

^m "I may take this opportunity of mentioning, that the woman from whom I removed an ovarian tumor in August 1844, was, when I last heard of her, some months since, in good health, and following her usual occupation, that of an itinerant dealer in pens and paper, in the neighbourhood of Edinburgh." Mr. W. B. Page has again performed the abdominal section; the particulars of the case are given in the *Lancet* for Dec. 12, 1846, whence the above remarks are taken.

ⁿ Case 115. I here beg publicly to thank T. Y. Arrowsmith, Esq., and H. E. Burd, Esq., both of Shrewsbury, for their great politeness in giving me the particulars of their cases, 115, 116.

^o Case 116. Mr. Burd states in a note, that "on this, the seventeenth day from the operation, the patient is doing well, and gives fair hopes of recovery."

^p These last four cases occurred after this work was in the press, and therefore are not included in the statistical results.

TABLE (No. 12).

Shewing the Number of Cases operated on by the large Incision.

No.	Operator.	Character of Operation.	Results.	No.	Operator.	Character of Operation.	Results.
1	M'Dowal	Long, 9 in.	Recovered	44	Dr. Clay	Long	Died
2	"	"	"	45	"	Long, 14 in.	Recovered
3	"	"	"	46	"	"	"
4	"	"	"	47	"	"	"
5	"	"	Died	48	"	"	"
6	Dr. Aysmar	Long	Recovered	49	Mr. Walne	"	"
7	"	"	Died	50	"	"	"
8	"	"	"	51	"	"	"
9	"	"	Recovered	52	"	"	"
10	"	"	Died	53	"	"	Died
11	Dr. A.G. Smith	"	Recovered	54	"	"	"
12	"	"	Died	55	Dr. Clisismann	"	Recovered
13	Mr. Lizars	"	Recovered	56	Mr. Morris	"	"
14	"	"	"	57	Mr. Southam	"	"
15	"	"	Died	58	"	"	"
16	"	"	Recovered	59	Dr. T. L. Atlee	"	"
17	Dr. Quitenbram	"	"	60	"	"	Died
18	Dr. Granville	"	"	61	Mr. Heath	"	"
19	"	"	Died	62	Mr. Lane	" 8 in.	Recovered
20	Dr. Martini	Long, 9 in.	"	63	"	" 7 in.	"
21	Dr. Dieffenback	Long	Recovered	64	"	" 7 in.	"
22	Dr. D.L. Rogers	"	"	65	Lane	Long	Died
23	Forcep	"	Died	66	Mr. Key	"	"
24	Dr. Ritter	"	Recovered	67	Mr. Greenhow	"	"
25	T. C. Warren	"	Died	68	Mr. B. Cooper	"	"
26	Mr. King	Long, 7.8 in.	Recovered	69	Dr. W. L. Atlee	"	Recovered
27	Dr. Dolhoff	Long	Died	70	"	"	"
28	"	"	"	71	Ehhardtstein	"	"
29	"	"	Recovered	72	Dr. Hopser	"	Died
30	Dr. Stilling	Long, 6 in.	Died	73	"	"	Recovered
31	Dr. Clay	" 27 in.	Recovered	74	Macdonald	"	"
32	"	" 14 in.	"	75	Groth	"	Died
33	"	" 28 in.	"	76	A. B.	"	"
34	"	" 16 in.	Died	77	E. F.	"	Recovered
35	"	" 14 in.	"	78	G. H.	"	Died
36	"	" 14 in.	"	79	Case in Gooch	" 6 in.	Recovered
37	"	" 14 in.	Recovered	80	Dr. Bowles	Long	"
38	"	" 14 in.	Died	81	Prof. Webster	"	"
39	"	" 14 in.	Recovered	82	Dr. Handyside	"	Died
40	"	" 16 in.	Died	83	Dr. P. Smith	"	"
41	"	" 14 in.	Recovered	84	Dr. Fred. Bird	" 8 in.	Recovered
42	"	" 8 in.	Died	85	John Dickin	Long	"
43	"	" 16 in.	Recovered				

TABLE (No. 13.)

Shewing the Number of the Operations by the Small Incision.

No.	Name of Operator.	Operation.	Result.
1	L. Aumonier	Small, 4 inches	Recovered
2	Dr. Nathan Smith	" 3 inches	"
3	Dr. Galenwoski	" 5 inches	"
4	Mr. Jeafferson	" $1\frac{1}{2}$ inch	"
5	Mr. King	"	"
6	"	"	"
7	Mr. West	Short, 2 inches	"
8	"	"	"
9	"	"	"
10	"	"	Died
11	Mr. Hargraves	"	Recovered
12	Mr. B. Philips	" $2\frac{1}{2}$ inches	Died
13	Dr. F. Bird	" $4\frac{1}{2}$ inches	Recovered
14	"	" 5 inches	"
15	"	" 3 inches	"
16	"	" 5 inches	"
17	"	" "	"
18	Mr. Lane	" "	"
19	"	"	"
20	Mr. Morgan	" $1\frac{1}{2}$ inch	Died
21	C. D.	"	Recovered
22	Mr. B. Page	" 4 inches	"
23	Mr. Solly	" "	Died

TABLE (No. 14.)

A Table of those Cases where the Tumor was not extracted.

No.	Name of Operator.	Operation.	Result.
1	Dr. M'Dowall	Not removed, long	Recovered
2	Dr. N. Smith	" Uterine } unknown Tumor }	"
3	"	" Cyst, "	"
4	Mr. Lizars	" long	"
5	Galenwoski	" short	"
6	Dr. Granville	" long	"
7	Dr. Martini	" "	Died
8	Dr. Dieffenback	" "	Recovered
9	Forcep	" "	Died
10	Mr. King	" short	Recovered
11	Dr. Dolhoff	" long	Died
12	Mr. West	" short	Recovered
13	Mr. Hargraves	" "	"
14	Dr. Clay	" long	Died
15	Mr. Walne	" "	Recovered
16	Morgan	" short	Died
17	A. B.	" long	"
18	Prof. Webster	" "	Recovered

TABLE (No. 15.)

No Tumor found.

No.	Name of Operator.	Operation.	Result.
19	Dr. A. G. Smith	No tumor, long	Died
20	Mr. Lizars	" "	Recovered
21	Mr. King	" "	"
22	Mr. Dolhoff	" "	"
23	C. D.	" small	"
24	Case in Gooch	" long	"
*			

* A case is related of a patient of the name of Susannah Tose, who came under Dr. Bright in Guy's Hospital, and who had a wound in the abdominal walls, which she said was the remains of an opening made into the cavity of the abdomen by a surgeon to take out a tumor, but he found none. She gave her account very loosely, and cannot be believed. I place this account in a note to prevent others from using the case.

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